

TENNIS COURT CONVERSION TO BEACH VOLLEYBALL EAST CAMPUS



THE UNIVERSITY *of*
NEW ORLEANS

BID DOCUMENTS

H/S

HOLLY & SMITH ARCHITECTS

H/S Project No.: 21048

12/10/2021

UNIVERSITY of NEW ORLEANS

BID SPECIFICATIONS FOR
JOB ENTITLED

TENNIS COURT CONVERSION TO BEACH VOLLEYBALL
EAST CAMPUS

Sealed Bid #BTB 2684

Bid Date: **January 13, 2022**

Bid Time: 2:00 p.m.

Mandatory Pre-Bid Conference:

Date: **January 4, 2022**

10:00 a.m. at the

Old Tennis Courts – East Campus | Tennis Center Building #D
6801 Franklin Ave.
New Orleans, LA
(behind Lakefront Arena, side of Maestri Baseball Field)



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EAST CAMPUS

PREPARED BY

UNIVERSITY OF NEW ORLEANS

PURCHASING OFFICE

Administration Annex, Room 1004-G

LAKEFRONT - NEW ORLEANS - LOUISIANA – 70148

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Date: 12/10/2021

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BID INFORMATION

UNIVERSITY of NEW ORLEANS

INSTRUCTIONS TO BIDDERS

ARTICLE I

PROJECT TITLE AND BID OPENING DATE & TIME

1.1 Project Title: **TENNIS COURT CONVERSION TO BEACH VOLLEYBALL**

Bid Opening Date & Time: **January 13, 2022 at 2:00 p.m.**

Location of Bid Opening:

University of New Orleans Campus
Purchasing Office
Administration Annex, Room 1004G
New Orleans, Louisiana 70148

1.2 DEFINITIONS

1.2.1 The Bidding Documents include the following

- a. Bid Information & Forms dated 12/10/21.
- b. Specifications Sections dated 12/10/21.
- c. Drawings Sheets dated 12/10/21.
- d. Addenda issued during the bid period and acknowledged in the Bid Form

1.2.2 All definitions set forth in the General Conditions of the Contract for Construction, AIA Documents A201, or in other Contract Documents are applicable to the Bidding Documents.

1.2.3 Addenda are written or graphic instruments issued by the Architect prior to the opening of bids which modify or interpret the bidding documents by addition, deletions, clarifications, or corrections.

1.2.4 A Bid is a complete and properly signed proposal to do the Work or designated portion thereof for the sums stipulated therein supported by data called for by the Bidding Documents.

1.2.5 Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described as the base, to which work may be added for sums stated in Alternate Bids.

1.2.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to the amount of the Base Bid if the corresponding change in project scope or materials or methods of construction described in the Bidding Documents is accepted.

1.2.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials or services as described in the proposed Contract Documents.

1.2.8 A Bidder is one who submits a Bid for a prime contract with the Owner for the Work described in the proposed Contract Documents.

1.2.9 A Sub-bidder is one who submits a bid to a Bidder for materials or labor for a portion of the Work

ARTICLE 2

BIDDER'S REPRESENTATION

2.1 Each Bidder by making his bid represents that:

- 2.1.1 He has read and understands the Bidding Documents and his bid is made in accordance therewith.
- 2.1.2 He has visited the site and familiarized himself with the local conditions under which the work is to be performed.

The Bidder is advised to carefully consider all University physical features and activities and occupancies by faculty, staff and students, and to plan construction activities so as not to disrupt the normal operations and activities of the University except as expressly permitted by the University in writing. The Bidder shall be especially aware of existing electric, gas, water, telephone and/or other utilities and facilities which may be in the way of or adjacent to the Work, and shall take appropriate action to protect these utilities during the Work.

Every effort has been made to accurately show all pertinent surface and subsurface features accurately. For self-assurance, the Bidder may examine available drawings and documents related to University premises. Such examinations may be made only in the offices of the University Facility Services as part of the Mandatory Pre-Bid Conference.

- 2.1.3 His bid is based solely upon the materials, systems and equipment described in the Bidding Documents as advertised and as modified by addenda.
- 2.1.4 When a discrepancy or ambiguity arises between the written specifications and the drawings, the document which is more stringent, or which benefits the University more as determined by the Director, shall govern.
- 2.1.5 His bid is not based on any verbal instructions contrary to the Bidding Documents and addenda.
- 2.2 The Bidder must be fully qualified under any State or local licensing law for Contractors in effect at the time and at the location of the work before submitting his bid. In the State of Louisiana, only the bids of Contractors and Subcontractors duly licensed under Louisiana Revised Statutes 37:2150, et seq. will be considered, if applicable. The Contractor shall be responsible for determining that all of his Subbidders or prospective Subcontractors are duly licensed in accordance with law. (See paragraph 4.1.8)
- 2.3 The University reserves the right to examine the Successful Bidder's past payroll records and those of any subcontractor to determine whether the employees being used on the contract are regularly employed. The University also reserves the right to question the use of an employee whom it feels is unskilled or untrained on a task that requires a skill. If the bidder intends to use laborers or unskilled workmen on any aspect of the contract, the bidder must furnish a list of the tasks to be performed by said laborers and unskilled workmen with their bid.
- 2.4 If the Contractor is required to replace any employees because of their failure to comply with these requirements, any time lost on the job shall be the responsibility of the Contractor and shall not be an acceptable reason for requesting extensions of any completion deadlines or waiver of any liquidated damages specified elsewhere in the bid specifications.
- 2.5 In the event of inconsistencies within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes, and ordinances, the Contractor shall: (1) Provide the better quality, upgrade, or quantity of Work, or (2) Comply

with the more stringent requirement, either or both in accordance with the Architect's interpretation.

ARTICLE 3

BIDDING DOCUMENTS

3.1 Copies

- 3.1.1 Complete bid documents may be obtained from the University of New Orleans Purchasing Office.

The Bidding Documents consist of the Drawings, the Bid Instructions and all Addenda issued prior to bid opening. Changes to the work made after the contract signing shall be documented by Change Order.

These INSTRUCTIONS TO BIDDERS, including amendments and additions thereto, apply to each and every heading of the TECHNICAL SPECIFICATIONS with the same force as though repeated in full under each heading.

- 3.1.2 Complete sets of Bidding Documents shall be used in preparing bids; neither the University nor the Consultant assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 3.1.3 The University or Consultant in making copies of the Bidding Documents available on the above terms, do so only for the purpose of obtaining bids on the work and do not confer a license or grant for any other use.

3.2 Interpretation or Correction of Bidding Documents

- 3.2.1 Bidders shall promptly notify the Architect of any ambiguity, inconsistency, or error which they may discover upon examination of the Bidding Documents or of the site and local conditions
- 3.2.2 Bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the Architect, **submitted through Architect's Project Website or Email**, to reach him at least seven (7) days prior to the date for receipt of bids.
- 3.2.3 It shall be the Bidder's responsibility to make inquiry as to addenda issued. All issued addenda shall be acknowledged on the Bid Form and shall become part of the Contract. Neither the University nor its Consultant(s) will be responsible for any explanation or interpretations of the Documents not covered by written, issued addenda.
- 3.2.4 Any interpretation, correction or change of the Bidding Documents will be made by addendum. Interpretations, corrections or changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon such interpretations, corrections and changes.

3.3 Substitutions

- 3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution. No substitutions shall be allowed after bid

opening.

- 3.3.2 No substitution will be considered unless written request for approval has been submitted by the Proposer and has been received by the Architect at least seven (7) days prior to the date for receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including model numbers, drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or work that incorporation of the substitute would require shall be included. It shall be the responsibility of the proposer to include in his proposal all changes required of the Contract Documents if the proposed substitute is used. The burden of proof of the merit of the proposed substitute is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

Approval, if granted, is given contingent upon Contractor being responsible for any costs which may be necessary to modify the space or facilities needed to accommodate the materials and equipment approved.

- 3.3.3 If the Architect approves any proposed substitution, such approval will be set forth in an addendum. Bidders shall not rely upon approvals made in any other manner.
- 3.3.4 It is incumbent upon the bidder, once a substitution is accepted, to assure that the substitution will meet the requirements of the project as an acceptable and contributing operating component of the completed project. The bidder and proposer of the substitution if used in the project shall provide all information, drawings and other necessary equipment, and coordination to ensure that the substitution will operate, fit and be able to be maintained as an acceptable operating component of the project.

3.4 Addenda

- 3.4.1 Addenda will be e-mailed or delivered to all Contractors in attendance at the mandatory Pre-Bid Conference or to all known bidders by the Purchasing Department of the University of New Orleans to have received a complete set of bidding documents if no mandatory Pre-Bid Conference is scheduled.
- 3.4.2 Copies of addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
- 3.4.3 Addenda shall not be issued within a period of seventy-two (72) hours prior to the time set for the opening of bids, excluding Saturdays, Sundays, and any other legal holidays; however, if the necessity arises to issue an addendum modifying plans and specifications within the seventy-two-hour (72) period prior to the time for the opening of bids, then the opening of bids shall be extended exactly one week, without the requirement of re-advertising.
- 3.4.4 The University shall have the right to extend the bid date by up to (30) thirty days without the requirement of re-advertising. Any such extension shall be made by addendum issued by the University of New Orleans Purchasing Office.
- 3.4.5 Each Bidder shall ascertain from the University of New Orleans Purchasing Office prior to submitting his bid that he has received all addenda issued, and he shall acknowledge their receipt on the Bid Form.

ARTICLE 4

BIDDING PROCEDURE

4.1 Form and Style of Bids

- 4.1.1 Bids shall be submitted on the forms provided by the University.
- 4.1.2 All blanks on the Bid Form shall be filled in by electronic means, typewriter or manually in ink. Signature is required manually by ink.
- 4.1.3 Where so indicated by the makeup of the Bid Form, sums shall be expressed in both words and figures, and in case of discrepancy between the two, the written words shall govern.
- 4.1.4 Any interlineations, alteration or erasure must be initialed by the signer of the bid or his authorized representative.
- 4.1.5 Bidders are cautioned to complete all alternates and unit prices should such be required in the Bid Form. Failure to submit alternate and unit prices will render the proposal informal and shall cause its rejection.
- 4.1.6 Bidder shall make no additional stipulations on the Bid Form nor qualify his bid in any other manner.
- 4.1.7 The bid shall include the legal name of Bidder and the bid shall be signed by the person or persons legally authorized to bind the Bidder to a Contract. The authority of the signature of the person submitting the bid shall be deemed sufficient and acceptable under any of the following conditions:
 - a. Signature on bid is that of any corporate officer or member of a partnership or partnership in commendam listed on most current annual report on file with Secretary of State.
 - b. Signature on bid is that of authorized representative of corporation, partnership, or other legal entity and bid is accompanied by corporate resolution, certification as to the corporate principal, or other documents indicating authority which are acceptable to the University
 - c. Corporation, partnership, or other legal entity has filed in the records of the Secretary of State, an affidavit, resolution or other acknowledged or authentic document indicating the names of all parties authorized to submit bids for public contracts. A bid submitted by an agency shall have a current Power of Attorney attached certifying agent's authority to bind Bidder. The name and license number on the envelope shall be the same as the entity identified on the Bid Form

By signing this bid, the bidder certifies compliance with the above

- 4.1.8 On any bid of Fifty Thousand Dollars (\$50,000.00) or more, the Contractor shall certify that he is licensed under R. S. 37: 2150-2173 by placing his signature on the

appropriate blank on the Bid Form.

The contractor shall place his Louisiana Contractor License Number on the appropriate blank on the Bid Form.

The Contractor shall be licensed by the Louisiana State Licensing Board for Contractors under Category 1 Building Construction.

Bids in excess of Ten Thousand Dollars (\$10,000.00) received from contractors not licensed under the above classification will not be considered.

4.2 Bid Security

- 4.2.1 No bid shall be considered or accepted unless the bid is accompanied by bid security. Bid Security must accompany the bid in the sealed envelope. Bidders to attach a certified check, cashier's check, or University of New Orleans Bid Bond Form in the amount of five percent (5%) of the sum of the base bid and all alternates, as an evidence of good faith. Bidders are hereby notified that Bank Checks, Official Bank Checks or similar are not acceptable as bid security. Certified or cashier's checks to be drawn on a bank insured by the Federal Deposit Insurance Corporation in favor of The University of New Orleans or the bid bond shall be written by a surety or insurance company currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register, or by a Louisiana-domiciled insurance company with at least an A- rating in the latest printing of the A.M. Best's Key Rating Guide to write individual bonds up to ten percent of policyholder's surplus as shown in the A.M. Best's Key Rating Guide. If the bid security for this project is a Bond, then such Bond shall be submitted on the Bid Bond Form included in the specifications. Any Bond submitted other than on this bond form shall cause the bid to be rejected.

Bid Security furnished by the Contractor shall guarantee that the Contractor will, if awarded the work according to the terms of his proposal, enter into the Contract and furnish Performance and Payment Bonds as required by these Bidding Documents, within ten (10) days after written notice that the instrument is ready for his signature.

Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, the amount of the bid security shall be forfeited to the University as liquidated damages, not as penalty.

- 4.2.2 The University will have the right to retain the bid security of Bidders until either (a) the Contract has been executed and bonds have been furnished, or (b) the specified time has elapsed so that bids may be withdrawn, or (c) all bids have been rejected.

4.3 Submission of Bids

- 4.3.1 Bids shall be sealed in the envelope furnished with bid documents and will be received until the time specified and at the place specified in these bid documents. It shall be the specific responsibility of the Bidder to deliver his sealed bid to the University of New Orleans Purchasing Office at the appointed place and prior to the announced time for the opening of bids. Late delivery of a bid for any reason, including late delivery by United States Mail, or express delivery, shall disqualify the bid. The bid envelope shall be identified legibly on the outside with the

following:

- a. Project Name and Owner
- b. Architect
- c. Date
- d. Name , Address, and license number of the Bidder.

If the bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "Bid Enclosed" on the face thereof. Such bids shall be sent by Registered or Certified Mail, Return Receipt Requested, addressed to: University of New Orleans, Purchasing Office, Administration Annex Building, Room 1004-G, New Orleans, Louisiana 70148. Bids sent by express delivery shall be delivered to: University of New Orleans, Purchasing Office, Administration Annex Building, Room 1004-G, Lakefront, New Orleans, Louisiana 70148.

- 4.3.2 Bids shall be deposited at the designated location prior to the time on the date for receipt of bids indicated in these Bid documents, or any extension thereof made by addendum. Bids received after the time and date for receipt of bids will be returned unopened.
- 4.3.3 Bidder shall assume full responsibility for timely delivery at location designated for receipt of bids.
- 4.3.4 Oral, telephonic, telegraphic, or faxed bids are invalid and shall not receive consideration.
- 4.3.5 The University shall not consider notations written on outside of bid envelope which have the effect of amending the bid. Written modifications enclosed in the bid envelope, and signed or initialed by the Contractor or his representative, shall be accepted.
- 4.36 The bid submission shall include the following documents:
 - a. Bid Form and *Unit Price Form if unit prices are included*.
 - b. Bid Security
 - c. Document authorizing execution of signature on Bid Form if not submitting as a sole proprietor.

4.4 Modification or Withdrawal of Bid

- 4.4.1 A bid may not be modified, withdrawn, or canceled by the Bidder for a period of thirty (30) calendar days for the period following the time and bid date designated for the receipt of bids, and Bidder so agrees in submitting his bid, except in accordance with R.S. 38:2214 which states, in part, "Bids containing patently obvious, unintentional, and substantial mechanical, clerical, or mathematical errors, or errors of unintentional omission of a substantial quantity of work, labor, material, or services made directly in the compilation of the bid, may be withdrawn by the contractor if clear and convincing sworn, written evidence of such errors is furnished to the University of New Orleans Purchasing Office within forty-eight hours of the bid opening excluding Saturdays, Sundays, and legal holidays. Such errors must be clearly shown by objective evidence drawn from inspection of the original work papers, documents, or materials used in the preparation of the bid sought to be withdrawn. If the University of New Orleans Purchasing Office determines that the error is a patently obvious mechanical, clerical, or mathematical error, or unintentional omission of a substantial quantity of work, labor, material, or services, as opposed to a judgment error, and the bid was

submitted in good faith it shall accept the withdrawal and return the bid security to the contractor."

- 4.4.2 Prior to the time and date designated for receipt of bids, bids submitted early may be modified or withdrawn by notice to the University of New Orleans Purchasing Office at the place and prior to the time designated for receipt of bids.
- 4.4.3 Withdrawn bids may be resubmitted up to the time designated for the receipt of bids provided that they are then fully in conformance with these Instructions to Bidders.
- 4.4.4 Bid Security shall be in an amount sufficient for the bid as modified or resubmitted.

ARTICLE 5

CONSIDERATION OF BIDS

5.1 Opening of Bids

- 5.1.1 The properly identified Bids received on time will be opened publicly and will be read aloud, and a tabulation abstract of the amounts of the base bids and alternates, if any, will be made available to Bidders.

5.2 Rejection of Bids

- 5.2.1 The University shall have the right to reject any or all bids and in particular to reject a bid not accompanied by any required bid security or data required by the Bidding Documents or a bid in any way incomplete or irregular. The provisions and requirements of the Instructions to Bidders, the Advertisement for bids, and those required on the bid form shall not be considered as informalities and shall not be waived.
- 5.2.2 The University reserves the right to reject any and all bids at its discretion.

5.3 Acceptance of Bid

- 5.3.1 It is the intent of the University, if any alternates are accepted, to accept them in the order in which they are listed in the Bid Form. Determination of the Low Bidder shall be on the basis of the sum of the base bid and the alternates accepted. However, the University shall reserve the right to accept alternates in any order which does not affect determination of the Low Bidder.
- 5.3.2 University of New Orleans upon receipt of bids, shall act within thirty calendar days of such receipt to award contract to the lowest responsible bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents is judged to be reasonable and does not exceed the funds available or reject all bids. However, University of New Orleans, by mutually written consent, may agree to extend the deadline of award by one or more extensions of thirty calendar days.

ARTICLE 6
PERFORMANCE AND PAYMENT BOND

6.1 Bond Required

6.1.1 The Contractor shall pay for and provide a Performance and Labor and Material Payment Bond in the full amount of the bid within ten (10) days after written notice from the University or its Consultant that the work has been awarded to him. Bond furnished shall be a statutory bond and no modification, omissions, additions in or to the terms of the contract, in the plans and specifications or in the manner and mode of payment shall in any manner diminish, enlarge, or otherwise modify the obligations of the bond. Surety bond shall be written by a surety or insurance company currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register or by an insurance company that is either domiciled in Louisiana or owned by Louisiana residents and is licensed to write surety bonds. For any public works project, no surety or insurance company shall write a bond which is in excess of the amount indicated as approved by the U.S. Department of the Treasury Financial Management Service list; companies authorized by this paragraph who are not on the treasury list shall not write a bond when the penalty exceeds fifteen percent of its capital and surplus, such capital and surplus being the amount by which the company's assets exceed its liabilities as reflected by the most recent financial statements filed by the company with the Department of Insurance. In addition, any surety bond written for a public works project shall be written by a surety or insurance company that is currently licensed to do business in the State of Louisiana. Bond shall be in favor of The University of New Orleans.

6.2 Time of Delivery and Form of Bond

- 6.2.1 The Bidder shall deliver the required bond to the University simultaneous with the execution of the Contract.
- 6.2.2 Bond shall be in the form furnished by University of New Orleans Purchasing Office, entitled CONTRACT BETWEEN OWNER AND CONTRACTOR AND PERFORMANCE AND PAYMENT BOND, a copy of which is included in the Contract Documents.
- 6.2.3 The Bidder shall require the Attorney-in-Fact who executes the required bond on behalf of the surety to affix thereto a certified and current copy of his power of Attorney.

ARTICLE 7

FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

7.1 Form to be Used

- 7.1.1 Form of the Contract to be used shall be furnished by the University of New Orleans Purchasing Office, a copy of which is bound in the Bidding Documents.

7.2 Post Bid Information & Award

7.2.1 Submissions: Within ten (10) days after the Bid, the following documents shall be submitted to the Owner. **Failure to submit these documents within the specified time frame will result in disqualification of the Bidder.**

- a. Attestation Affidavit (Past Criminal Convictions of Bidders and Verification of Employees) form found within this bid package, in accordance with La. R.S. 38:2227 and LA. R.S. 38:2212.10.
- b. Non-Collusion Affidavit form bound within this bid package, in accordance with La. R.S. 38:2224

7.2.2 The Bidder shall, prior to the award of a Contract for the Work, submit the following information to the Architect.

- a. A designation of the work to be performed by the Bidder with his own forces.
- b. The proprietary names and the suppliers of principal items or systems of material and equipment proposed for the work.
- c. A list of names of the subcontractors or other persons or organizations (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the work.
- d. A Schedule of Values set up by trade item with labor and material separated for each phase of work.
- e. The name of the proposed superintendent along with a resume of same. The resume shall cover biographical data, past experience, and references.

7.2.3 The Bidder will be required to establish to the satisfaction of the Architect and the Owner the reliability and responsibility of the proposed Subcontractors to furnish and perform the work described in the Sections of the Specifications pertaining to such proposed Subcontractors' respective trades.

7.2.4 Prior to the award of the Contract, the Architect will notify the Bidder if either the Owner or the Architect, after due investigation, has reasonable and substantial objection to any person or organization on the Contractor's list of proposed Subcontractors.

7.2.5 Subcontractors and other persons and organizations proposed by the Bidder and accepted by the Owner and the Architect must be used on the work for which they were proposed and accepted and shall not be changed except with the written approval of the Owner and the Architect.

7.2.6 As soon as the contract has been fully awarded according to law, certified checks will be returned to all bidders other than the successful Bidder; the latter's check will be returned on the signing of the Contract.

7.2.7 Upon the execution of the contract, University of New Orleans, within thirty days thereafter, shall issue to the contractor a Notice to Proceed with the project. However, upon mutual consent by both parties, the Notice to Proceed may be extended.

- 7.2.8 After the purchase order has been awarded, no changes will be made to any part without written approval from the Director of the Department issuing these bid documents. The proposed change will be submitted in writing, with a complete breakdown of all material and labor, and the individual cost of each.
- 7.3 Successful Bidder's Delivery Schedule
- 7.3.1 The Successful Bidder will provide a delivery construction schedule. Submit within fifteen (15) days after the date established "Commencement of the Work".
- 7.3.2 Schedule Updating: Revise the schedule after each meeting, event, or activity where schedule revisions have been recognized or made. Distribute updated schedule with in seventy-two (72) hours to Project Manager for review.
- 7.4 Affirmative Action/Non-Discrimination
- 7.4.1 If the amount of the Contract is over \$10,000, the successful Bidder shall be required to execute the Equal Employment Opportunity Clause and Assurance of non-discrimination prior to the University entering into a contract. These documents will be in accordance with Chapter 60 of the rules and regulations, Office of Federal Contract Compliance, Equal Opportunity, U.S. Department of Labor.
- 7.5 Compliance Agreement
- 7.5.1 If the amount of the contract is \$50,000 or more, the successful Bidder shall be required to execute the Affirmative Action Compliance agreement prior to the University entering into a contract.
- 7.6 Recording Contract
- 7.6.1 The Contractor at his own expense, shall record the original executed Contract and the Performance and Labor and Material Bond with the Recorder of Mortgages, Orleans Parish, within five (5) working days of Contract signing. A NOTICE OF THIS RECORDING SHALL BE SENT TO THE PURCHASING OFFICE BEFORE PURCHASE ORDER AND NOTICE TO PROCEED ARE ISSUED.
- 7.6.2 Recordation of certain Change Orders, see General Conditions 1.16 CHANGES TO THE WORK.
- 7.7 Payments
- 7.7.1 The Contract shall provide payment equal to not more than ninety per cent (90%) of the total contract amount upon completion of the work. The remaining ten per cent (10%) shall be paid forty-five (45) days after the acceptance of the work by the University, provided a clear lien certificate is provided by the Contractor.
- 7.7.2 University standard forms for "Schedule of Values" and "Payment Request" will be provided to the Contractor at the Pre-Construction Conference. An original invoice must accompany the UNO pay request forms. **ONLY PAYMENT REQUESTS SUBMITTED ON THE UNIVERSITY FORM WILL BE PROCESSED FOR PAYMENT. ALL OTHERS WILL BE RETURNED FOR COMPLIANCE TO THIS REQUIREMENT.**

7.7.3 When an engineer, designer, or architect is involved with the project, all pay requests must have his or her original signature on the original pay request forms **before** they are submitted to the University for processing.

7.7.4 No notice of completion, delivery memo, invoice, or other document will be signed, or approvals of any type given for any part of the job or delivery of any equipment or materials, except by the Director of the Department issuing these bidding documents, or his designee, such designation to be made in writing and signed by the Director. All work will be done during normal working hours unless the Director grants prior written approval, or the scope of Work requires that the work be done after hours.

7.8 Termination of Contract for Convenience

7.8.1 The University may, at any time, terminate the Contract for the University's convenience and without cause. Upon receipt of written notice from the University of such termination for the University's convenience, the Contractor shall: cease operations as directed by the University in the notice; take actions necessary, or that the University may direct, for the protection and preservation of the Material, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

7.8.2 In case of such termination for the University's convenience, Contractor shall be entitled to receive payment for Work executed along with reasonable overhead and profit.

7.8.3 University shall not be responsible or otherwise liable for any demobilization costs or Incidental or consequential damages resulting from such termination.

7.9 Acceptance of the Work

7.9.1 Upon substantial completion of the Work, the University shall execute a certificate that the whole work provided for in this agreement has been completed and approved under the terms and conditions thereof.

The Contractor shall then file the acceptance of the whole work at his expense with the Recorder of Mortgage of the Parish of Orleans.

ARTICLE 8

COMPLETION TIME AND LIQUIDATED DAMAGES

8.1 Contract Time:

8.1.1 The Bidder agrees to guarantee completion of the work within **One Hundred and Eighty (180)** calendar days starting from the Notice to Proceed, subject to extensions as may be granted or the Contractor will be subject to pay to the University liquidated damages in the amount stated on this document. The Bidder's attention is especially directed to the urgency of this work and that time is of the essence.

a. Extensions for weather conditions shall not be given unless weather

conditions prevailing are deemed by the Architect to be abnormal.

8.2 Liquidated Damages

- 8.2.1 Time is of the essence and completion of the work must be within the Contract Time for Completion-stated in Paragraph 8.1.1, subject to such extensions as may be granted by the University for delays identified as beyond the Contractor's control.

The Contractor will be assessed **Three Hundred Dollars (\$300.00)** for each consecutive calendar day during which the work remains incomplete beyond the Contract Completion date stated on the "Notice to Proceed" or as amended by Change order, Sundays and holidays included. This amount is agreed upon as the proper measure of liquidated damages which the University will sustain per day by the failure of the undersigned to complete the work at the stipulated time and is not to be construed in any sense as a penalty.

ARTICLE 9

PRE-BID CONFERENCE

- 9.1 A Mandatory Pre-Bid Conference shall be held at the project site. Provisions for the site inspection are included as part of the mandatory **Pre-Bid Conference to be held at Old Tennis Courts (enter off of Franklin Ave., behind Lakefront Arena) at 10:00 A.M. on January 4, 2022. In the event of inclement weather, Pre-Bid Conference will be held in the Tennis Center Building # D.** The Pre-Bid Conference shall also provide opportunity for a review of the Bid Documents. The purpose of the Pre-Bid Conference is to familiarize Bidders with the requirements of the Project and the intent of the Bidding Documents, and to receive comments and information from interested Bidders.
- 9.2 Any revision of the Bidding Documents made as a result of the Pre-Bid Conference shall not be valid unless included in an addendum issued in accordance with Paragraph 3.4.1 of the Instructions to Bidders.

ARTICLE 10

INSURANCE

- 10.1 The Contractor, prior to commencing work, shall provide at his expense, proof of insurance coverage with insurance companies licensed in the State of Louisiana. Insurance shall be placed with insurers with an A.M. Best's rating of no less than A-VI.
- 10.2 Insurance requirements are set forth in "Supplement I" of these documents.

ARTICLE 11

FEDERAL & STATE CLAUSES FOR CONTRACTS

- 11.1 Federal clauses, if applicable
- 11.1.1 Anti-Kickback Clause: The contractor hereby agrees to adhere to the mandate dictated by the Copeland "Anti-Kickback" Act which provides that each contractor or subgrantee shall be prohibited from inducing, by any means, any person

employed in the completion of work, to give up any part of the compensation to which he is otherwise entitled.

- 11.1.2 Clean Air Act: For contracts over \$150,000, the contractor hereby agrees to adhere to the provisions which require compliance with all applicable standards, orders or requirements issued under Section 306 of the Clean Air Act which prohibits the use

under non-exempt federal contracts, grants, or loans of facilities included on the EPA list of violating facilities.

- 11.1.3 Energy Policy and Conservation Act: The contractor hereby recognizes the mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issues in compliance with the Energy Policy and Conservation Act (P.L. 94-163).

- 11.1.4 Clean Water Act: For contracts over \$150,000, the contractor hereby agrees to adhere to the provisions which require compliance with all applicable standards, orders or requirements issued under Section 508 of the Clean Water Act which prohibits the use under non-exempt federal contracts, grants or loans of facilities included on the EPA list of violating facilities.

- 11.1.5 Anti-Lobbying and Debarment Act: The contractor will be expected to comply with federal statutes in the Anti-Lobbying Act and the Debarment Act.

- 11.2 Prohibition of discriminatory boycotts of Israel in accordance with LA R.S. 39:1602.1 the following applies to any bid with a value of \$100,000 or more and to vendors with five or more employees: by submitting a response to this solicitation, the bidder or proposer certifies and agrees that the following information is correct: in preparing its response, the bidder or proposer has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not, in the solicitation, selection, or commercial treatment of any subcontractor or supplier, refused to transact or terminated business activities, or taken other actions intended to limit commercial relations, with a person or entity that is engaging in commercial transactions in Israel or Israel-controlled territories, with the specific intent to accomplish a boycott or divestment of Israel. The bidder has also not retaliated against any person or other entity for reporting such refusal, termination, or commercially limiting actions. The state reserves the right to reject the response of the bidder or proposer if this certification is subsequently determined to be false, and to terminate any contract awarded based on such a false response.

- 11.3 Certification of no federal suspension or debarment: By signing and submitting any bid for \$25,000 or more, the bidder certifies that their company, any subcontractors, or principals are not suspended or debarred by the General Services Administration (GSA) in accordance with the requirements in "audit requirements in subpart F of the Office of Management and Budget's Uniform Administrative Requirements, Cost Principles, and Audit Requirements for federal awards" (formerly OMB Circular A-133).

A list of parties who have been suspended or debarred can be viewed via the internet at <https://www.sam.gov>.

- 11.4 In accordance with Louisiana law, all corporations (see LA R.S. 12:262.1) and limited liability companies (see LA R.S. 12:1308.2) must be registered and in good standing with the Louisiana Secretary of State in order to hold a purchase order and/or contract over \$25,000.

SUPPLEMENT I
INSURANCE REQUIREMENTS

***** INSURANCE *****

STANDARDIZED INSURANCE REQUIREMENTS FOR ALL AGENCY CONTRACTS

- I. The following Indemnification Agreement shall be, and is hereby, a provision of the contract:

The other party agrees to protect, defend, indemnify, save and hold harmless the State of Louisiana, all State Departments, Agencies, Boards and Commissions, its officers, agents, servants and employees, including volunteers, from and against any and all claims, demands, expense and liability arising out of injury or death to any person or the damage, loss or destruction of any property which may occur or in any way grow out of any act or omission of the other party, its agents, servants, and employees, or any and all costs, expense and/or attorney fees incurred by the other party as a result of any claim, demands, and/or causes of action except of those claims, demands, and/or causes of action arising out of the negligence of the State of Louisiana, all State Departments, Agencies, Boards, Commissions, its agents, representatives, and/or employees. The other party agrees to investigate, handle, respond to, provide defense for and defend any such claims, demand, or suit at its sole expense and agrees to bear all other costs and expenses related thereto, even if it (claims, etc.) is groundless, false or fraudulent.

- II. All policies and certificates of insurance of the Contractor/Subcontractor shall contain the following clauses:
- A. The Contractor/Subcontractor's insurer will have no right of recovery or subrogation against the Agency, it being the intention of the parties that the insurance policies so affected shall protect both parties and the primary coverage for any and all losses covered by the below described insurance.
- B. The Agency shall be named as an additional insured as regards negligence by the contractor (ISO Form CG 20 10 – current form approved for use in Louisiana).
- C. The insurance companies issuing the policy or policies shall have no recourse against the Agency for payment of any premiums or for assessments under any form of policy.
- D. Any and all deductibles in the below described insurance policies shall be assumed by and be for the amount of, and at the sole risk of the Contractor/Subcontractor.
- III. **INSURANCE:** The Contractor/Subcontractor, prior to commencing work, shall provide at his own expense, proof of the following insurance coverages required by the contract to the Agency in insurance companies authorized in the State of Louisiana. Insurance is to be placed with insurers with an A. M. Best's rating of **A-:VI or higher**. This rating requirement may be waived for workers' compensation coverage only.

Thirty days prior notice of cancellation shall be given to the Agency by registered mail, return receipt requested, on all of the required coverage provided to the Agency. All notices will name the Contractor/Subcontractor and identify the contract number.

Insurance coverage specified in the GENERAL CONDITIONS (AIA Document A 201, 1997 Edition) to be provided by the Contractor, and any other insurance described below shall be furnished with the following minimum limits:

**SUPPLEMENT I
INSURANCE REQUIREMENTS**

***** INSURANCE *****

- A. Workers' Compensation - Statutory - in compliance with the Compensation Law of the State. Exception: Employers liability to be \$1,000,000 when work is to be over water and involves maritime exposures.
- B. Commercial General Liability Insurance with a combined single limit per occurrence for bodily injury and property damage. This insurance shall include coverage for bodily injury and property damage, and include the following coverages:
1. Premises - Operations;
 2. Broad Form Contractual Liability;
 3. Products and Completed Operations;
 4. Use of Contractors and Subcontractors;
 5. Personal Injury;
 6. Broad Form Property Damage;
 7. Explosion, Collapse and Underground (XCU) Coverage.

NOTE: On the certificate of insurance, under the description of operations, the following wording is required: THE AGGREGATE LOSS LIMIT APPLIES TO EACH PROJECT, or a copy of ISO form CG 25-03 (current form approved for use in Louisiana) shall be submitted.

COMBINED SINGLE LIMIT (CSL) - AMOUNT OF INSURANCE REQUIRED

Type of <u>Construction</u>	Projects under <u>\$100,000</u>	Projects \$100,001 <u>up to \$1,000,000</u>	Projects over <u>\$1,000,000</u>
New Buildings:			
Each Occurrence/ Minimum Limit	\$500,000	\$1,000,000	\$3,000,000
Aggregate (Applicable to this contract ONLY)	\$500,000	\$1,000,000	\$3,000,000
Renovations: <u>The building(s) value for this project is : N/A</u>			
Each Occurrence/ Minimum Limit	\$500,000**	\$1,000,000**	\$3,000,000**
Aggregate (Applicable to this contract ONLY)	\$500,000**	\$1,000,000**	\$3,000,000**

While the minimum combined single limit of \$500,000 is required for all renovations, the value of a building shall be multiplied by 10% and insurance requirements will be increased at \$1,000,000 intervals and rounded to the nearest \$1,000,000. Example: Renovation on \$33,000,000 building would require \$3,000,000 minimum combined single limit of coverage. Maximum limit required is \$5,000,000 regardless of building value.

- C. Business Automobile Liability Insurance with a combined single limit of \$1,000,000 per occurrence for bodily injury and property damage, unless otherwise indicated. This insurance shall include for bodily injury and property damage the following coverages:

**SUPPLEMENT I
INSURANCE REQUIREMENTS**

***** INSURANCE *****

1. Owned automobiles;
2. Hired automobiles;
3. Non-owned automobiles.

D. An Umbrella Policy may be used to meet minimum requirements.

IV. All property losses shall be made payable to and adjusted with the Agency.

V. All policies of insurance shall be approved by the contracting Agency prior to the inception of any work.

VI. Other insurance required is as follows:

Owner's Protective Liability (OPL) Insurance shall be furnished by the Contractor and naming the State of Louisiana as the Named Insured for projects over \$50,000.

	Projects under <u>\$100,000</u>	Projects \$100,001 <u>up to \$1,000,000</u>	Projects over <u>\$1,000,000</u>
CSL – Each Occurrence:	\$500,000	\$1,000,000	\$3,000,000

VII. Property Insurance

The General Contractor shall purchase and maintain property insurance upon the entire work included in the contract for an amount equal to the greater of the full-completed value or the amount of the construction contract including any amendments thereto. The general contractor's policy shall provide "ALL RISK" Builder's Risk insurance (Extended to include the perils of wind, collapse, vandalism/malicious mischief, and theft, including theft of materials whether or not attached to any structure). The "All Risk" Builder's Risk insurance must also cover architect's and engineer's fees that may be necessary to provide plans and specifications and supervision of work for the repair and/or replacement of property damage caused by a covered peril not to exceed 10% of the cost of those repair and/or replacements

Flood coverage shall be provided by the Contractor on the first floor and below for projects North of the Interstate Corridor beginning at the Texas – Louisiana border at Interstate 10 east to the Baton Rouge junction of Interstate 12, East to Slidell junction with Interstate 10 to the Louisiana – Mississippi border. Flood sub-limit shall equal an amount no lower than 10% of the total contract cost per occurrence. Coverage for roofing projects shall not require flood coverage.

On projects south of this corridor, flood coverage shall be provided by the State of Louisiana, as the owner, through the National Flood Insurance Program (NFIP). The Contractor will be liable for the \$5,000 deductible on the NFIP policy from the Notice to Proceed date through the Notice of Final Acceptance date of the project.

A specialty contractor shall purchase and maintain property insurance upon the system to be installed for an amount equal to the greater of the full-completed value or the amount of the contract including any amendments thereto. The specialty contractor may provide an installation floater with the same coverage as the "ALL RISK" Builder's Risk insurance policy.

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***** INSURANCE *****

The policy must include the interest of the Owner, Contractor, and Subcontractors as their interest may appear. The contractor has the right to purchase coverage or self-insure any exposures not required by the bid specifications, but shall be held liable for all losses, deductibles, self-insurance for coverage not required.

Policies insuring projects involving additions, alterations or repairs to existing buildings or structures must include an endorsement providing the following:

In the event of a disagreement regarding a loss covered by this policy which may also be covered by the State of Louisiana, Policy of self-insurance or any commercial property insurance policy purchased by the State of Louisiana, Office of Risk Management (ORM) covering in excess of the State of Louisiana, policy of self-insurance, this company agrees to the following procedure to establish coverage and/or the amount of loss:

Any party to a loss may make a written demand for an appraisal of the matter in disagreement. Within 20 days of receipt of written demand, this company and either ORM or its commercial insurance company shall each select a competent and impartial appraiser and notify the other of the appraiser selected. The two appraisers will select a competent and impartial umpire. The appraisers will then identify the policy or policies under which the loss is insured and, if necessary, state separately the value of the property and the amount of loss that must be borne by each policy. If the appraisers fail to agree, they shall submit their differences to the umpire. A written decision by any two shall determine the policy or policies and the amount of loss. Each insurance company (or ORM) agree that the decision of the appraisers and the umpire, if involved, will be binding and final and that neither party will resort to litigation. Each of the two parties shall pay its chosen appraiser and bear the cost of the umpire equally.

- VIII. If, at any time, any of the said policies shall be or become unsatisfactory to the Agency, as to form or substance, or if a company issuing any such policy shall be or become unsatisfactory to the Agency, the Contractor/Subcontractor shall promptly obtain a new policy, submit the same to the Agency for approval and submit a certificate thereof as herein above provided.

Upon failure of the Contractor/Subcontractor to furnish, deliver and maintain such insurance as above provided, this contract, at the election of the Agency, may be forthwith declared suspended, discontinued or terminated. Failure of the Contractor/Subcontractor to take out and/or to maintain or the taking out and/or maintenance of any required insurance shall not relieve the Contractor/Subcontractor from any liability under the contract, nor shall the insurance requirements be construed to conflict with the obligations of the Contractor/Subcontractor concerning indemnification. The Agency reserves the right to require complete, certified copies of all required insurance policies at any time.

**SUPPLEMENT I
INSURANCE REQUIREMENTS**

***** INSURANCE *****

INFORMATION FOR BIDDERS

RISKS AND INDEMNIFICATIONS ASSUMED BY THE CONTRACTOR

- A. Neither the acceptance of the completed work or payment therefore shall release the Contractor/Subcontractor from his obligations from the insurance requirements or indemnification agreement.
1. Additional insurance may be required on an individual basis for extra hazardous contracts and specific service agreements. If such additional insurance is required for a specific contract, that requirement will be described in the "Special Conditions" of the contract specifications.
 2. If any of the Property and Casualty insurance requirements are not complied with at their renewal dates, payments to the Contractor/Subcontractor will be withheld until those requirements have been met, or at the option of the Agency, the Agency may pay the Renewal Premium and withhold such payments from any monies due the Contractor/Subcontractor.
 3. All property losses shall be made payable to and adjusted with the Agency.
 4. All policies and certificates of insurance shall be approved by the contracting agency prior to the inception of any work.
 5. Other coverages may be required by the Agency based on specific needs. If such other coverages are required for this contract, those coverages will be described in the "Special Conditions" of the contract specifications.
 6. If at any time any of the foregoing policies shall be or become unsatisfactory to the Agency, as to form or substance, or if a company issuing any such policy shall be or become unsatisfactory to the Agency, the Contractor/Subcontractor shall, upon notice to that effect from the Agency, promptly obtain a new policy, submit the same to the Agency for approval and submit a certificate thereof as herein above provided. Upon failure of the Contractor/Subcontractor to furnish, deliver and maintain such insurance as above provided, this Contract, at the election of the Agency, may be forthwith declared suspended, discontinued or terminated. Failure of the Contractor/Subcontractor to take out and/or maintain or the taking out and/or maintenance of any required insurance, shall not relieve the Contractor/Subcontractor from any liability under the Contract, nor shall the insurance requirements be construed to conflict with or otherwise limit the obligations of the Contractor/Subcontractor concerning indemnification. The agency reserves the right to require complete, certified copies of all required insurance policies at any time.

SUBCONTRACTORS

Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

CERTIFICATES OF INSURANCE

Contractor shall furnish the Agency with certificates of insurance affecting coverage required by this clause. The certificates for each insurance policy are to be signed by a person authorized by that

SUPPLEMENT I
INSURANCE REQUIREMENTS

***** INSURANCE *****

insurer to bind coverage on its behalf. The certificates are to be received and approved by the Agency before work commences. The Agency reserves the right to require complete, certified copies of all required insurance policies at any time.

INSURANCE REQUIREMENTS FOR CONTRACTORS

Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors. The cost of such insurance shall be included in the Contractor's bid.

A. MINIMUM SCOPE OF INSURANCE

Coverage shall be at least as broad as:

1. Insurance Services Office Commercial General Liability coverage "occurrence" form CG 00 01 (current form approved for use in Louisiana). "Claims Made" form is unacceptable.
2. Insurance Services Office form number CA 00 01 (current form approved for use in Louisiana) covering Automobile Liability. The policy shall provide coverage for owned, hired, and non-owned coverage. If an automobile is to be utilized in the execution of this contract, and the vendor/contractor does not own a vehicle, then proof of hired and non-owned coverage is sufficient.
3. Workers' Compensation insurance as required by the Labor Code of the State of Louisiana, including Employers Liability insurance.

B. MINIMUM LIMITS OF INSURANCE

Contractor shall maintain limits no less than:

1. Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage (or higher limits depending on size of contract.)
2. Automobile Liability: \$1,000,000 combined single limit per accident, for bodily injury and property damage.
3. Workers Compensation and Employers Liability: Workers' Compensation limits as required by the Labor Code of the State of Louisiana and Employers Liability coverage. Exception: Employers liability limit is to be \$1,000,000 when work is to be over water and involves maritime exposure.

C. DEDUCTIBLES AND SELF-INSURED RETENTIONS

Any deductibles or self-insured retentions must be declared to and approved by the Agency. At the option of the Agency, either 1) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Agency, its officers, officials, employees and volunteers, or 2) the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

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INSURANCE REQUIREMENTS

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D. OTHER INSURANCE PROVISIONS

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverages

- a. The Agency, its officers, officials, employees, Boards and Commissions and volunteers are to be added as "additional insured" as respects liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor, premises owned, occupied or used by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Agency, its officers, officials, employees or volunteers. It is understood that the business auto policy under "Who is an Insured" automatically provides liability coverage in favor of the State of Louisiana.
- b. Any failure to comply with reporting provisions of the policy shall not affect coverage provided to the Agency, its officers, officials, employees, Boards and Commissions or volunteers.
- c. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2. Workers' Compensation and Employers' Liability Coverage

The insurer shall agree to waive all rights of subrogation against the Agency, its officers, officials, employees and volunteers for losses arising from work performed by the Contractor for the Agency.

3. All Coverages

Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the Agency.

E. ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with an A.M. Best's rating of **A-:VI or higher**. This rating requirement may be waived for workers' compensation coverage only.

F. VERIFICATION OF COVERAGE

Contractor shall furnish the Agency with certificates of insurance effecting coverage required. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates are to be received and approved by the Agency before work commences. The Agency reserves the right to require complete, certified copies of all required insurance policies at any time.

***** INSURANCE AND INDEMNIFICATION *****

**** EXHIBIT A ****

INDEMNIFICATION AGREEMENT

The _____ agrees to protect, defend, indemnify, save, and hold harmless the
{Contractor/Subcontractor/Lessee/Supplier}

State of Louisiana, all State Departments, Agencies, Boards and Commissions, its officers, agents, servants and employees, including volunteers, from and against any and all claims, demands, expenses and liability arising out of injury or death to any person or the damage, loss or destruction of any property which may occur or in any way grow out of any act or omission of _____, its agents, servants, and
{Contractor/Subcontractor/Lessee/Supplier}

employees, or any and all costs, expenses and/or attorney fees incurred by

_____ as a result of any claims, demands, and/or causes of action except
{Contractor/Subcontractor/Lessee/Supplier}

those claims, demands, and/or causes of action arising out of the negligence of the State of Louisiana, all State Departments, Agencies, Boards, Commissions, its agents, representatives, and/or employees.

_____ agrees to investigate, handle, respond to, provide defense for and
{Contractor/Subcontractor/Lessee/Supplier}

defend any such claims, demands, or suits at its sole expense and agrees to bear all other costs and expenses related thereto, even if they (claims, etc.) are groundless, false or fraudulent.

Accepted by _____
Company Name

Signature

Title

Date Accepted _____

Is Certificate of Insurance Attached? _____ Yes _____ No

Contract No. _____ for _____
State Agency Number and Name

PURPOSE OF CONTRACT: _____

BID BOND

FOR

UNIVERSITY OF NEW ORLEANS PROJECT

(Date)

KNOW ALL MEN BY THESE PRESENTS:

That _____ of

_____, as Principal, and

_____, as Surety, are held and firmly bound unto the State of Louisiana, and The University of New Orleans, in the full and just sum of five (5%) percent of the total amount of this proposal, including all alternates, lawful money of the United States, for payment of which sum, well and truly be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

Surety represents that it is listed on the current U.S. Department of the Treasury Financial Management Service list of approved bonding companies as approved for an amount equal to or greater than the amount for which it obligates itself in this instrument or that it is a Louisiana-domiciled insurance company with at least an A- rating in the latest printing of the A.M. Best's Key Rating Guide. If surety qualifies by virtue of its Best's listing, the Bond amount may not exceed ten percent of policyholders' surplus as shown in the latest A.M. Best's Key Rating Guide.

The Surety further represents that it is licensed to do business in the State of Louisiana and that this Bond is signed by surety's agent or attorney-in-fact. This Bid Bond is accompanied by appropriate power of attorney.

THE CONDITION OF THIS OBLIGATION IS SUCH that, whereas said Principal is herewith submitting its proposal to the obligee on a Contract for:

NOW, THEREFORE, if the said Contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter into the Contract in writing and give a good and sufficient bond to secure the performance of the terms and conditions of the Contract with surety acceptable to the obligee, then this obligation shall be void; otherwise this obligation shall become due and payable.

PRINCIPAL (BIDDER)

SURETY

BY _____ BY _____

AUTHORIZED OFFICER-OWNER-PARTNER

AGENT OR ATTORNEY-IN-FACT

(SEAL)

CONTRACT BETWEEN UNIVERSITY AND CONTRACTOR

This agreement made and entered into at New Orleans, Louisiana, this ____ day of _____, 200_, by and between The University of New Orleans, herein represented by Troy A. Bacino, Assistant Director of Purchasing, University of New Orleans, party of the first part and hereinafter sometimes called the

University; and _____
(Contractor)

herein represented by _____
(Name and title)

Party of the second part and hereinafter sometimes called the Contractor:

WITNESSETH, THAT the University and the Contractor, for the considerations hereinafter named, agree as follows, that:

1. The Advertisement for Bids (if advertised)
2. The Bid Proposal
3. The General Conditions and Instructions
4. Bonds
5. The Specifications
6. The Following Enumerated Plans:
7. The Following Enumerated Addenda:

are all hereby made a part of this Contract to the same extent as if incorporated here in full.

CONTRACT BETWEEN UNIVERSITY AND CONTRACTOR

The Contractor agrees to furnish all materials, labor, tools, equipment and other facilities necessary and to perform all work required for:

In accordance with this Contract and their proposal dated _____ all in strict accord with the requirements of the Contract.

The work to be performed under this contract shall be commenced immediately after award is made to the successful bidder and notification by the University that the work shall start, and shall be fully completed within the time stated in the Instructions to Bidders, subject to pertinent provisions of the General Conditions of the Contract Documents.

The amount to be paid to the Contractor by the University, subject to modification on account of changes as herein provided and/or as may be agreed to in writing by both parties to this contract is _____

(figures)

(in words)

The University shall make payments on account of the Contract as provided in the Instructions and Specifications.

Performance and Payment Bond: To these presents personally came and intervened, herein acting for _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business in the state of Louisiana, as surety, who declared that having taken cognizance of this Contract and of the Construction Documents mentioned herein, he hereby in his capacity as its Attorney in Fact obligates his said company, as surety for the said Contractor, unto the said University, up to the sum of _____. The condition of this Performance and Payment Bond shall be that should the Contractor herein not perform the contract in accordance with the terms and conditions hereof, or should said Contractor not fully indemnify and save harmless the University, from all cost and damages which he may suffer by said Contractor's nonperformance or should said Contractor not pay all persons who have and fulfill obligations to perform labor and/or furnish materials in the prosecution of the work provided for herein, including by way of example workmen, laborers, mechanics, and furnishers of materials, machinery, equipment and fixtures, then said Surety agrees and is bound to so perform the Contract upon demand by the University and make said payments in accordance with law.

Provided, that any alterations which may be made in the terms, of the Contract or in the work to be done under it, or the giving by the University of any extensions of time for the performance of the Contract, or any other forbearance on the part of either the University or the Contractor to the other shall not in any way release the Contractor or the Surety from their liability hereunder, notice to the Surety of any such alterations, extensions or other forbearance being hereby waived.

In Witness whereof, the parties hereto on the day and year first above written have executed this agreement in _____ counterparts, each of which shall, without proof or accountancy for the other counterparts, be deemed an original thereof.

This Performance and Payment Bond is accompanied by appropriate Power of Attorney.

WITNESSES:

(CONTRACTOR)

BY: _____
(TITLE)

THE UNIVERSITY OF NEW ORLEANS

BY: _____

(TITLE)

(SURETY)

(ATTORNEY-IN-FACT)

STATE OF LOUISIANA
PARISH OF _____

AFFIDAVIT ATTESTING THAT PUBLIC CONTRACT
WAS NOT, NOR WILL NOT BE SECURED
THROUGH EMPLOYMENT OR PAYMENT OF SOLICITOR

KNOW ALL MEN BY THESE PRESENT, that a public contract is
contemplated between the UNIVERSITY OF NEW ORLEANS and:

(contractor)

represented by _____,
(title)

who attests that he is empowered and authorized to execute said
documents.

FURTHER, _____, who being duly sworn, does depose and attest that:

(1) Affiant employed no person, corporation, firm, association, or other organization,
either directly or indirectly, to secure the public contract under which he received payment, other
than persons regularly employed by the affiant whose services in connection with the
construction of the public building or project or in securing the public contract were in the regular
course of their duties for affiant; and

(2) No part of the contract price received by affiant was paid or will be paid to any person,
corporation, firm, association, or other organization for soliciting the contract, other than the
payment of their normal compensation to persons regularly employed by the affiant whose
services in connection with the construction of the public building or project were in the regular
course of their duties for affiant.

WITNESSES:

BEFORE ME, the undersigned authority, personally appeared, who being duly sworn,
deposes the states that the above is true and correct in all respects recited.

SWORN TO AND SUBSCRIBED before me this __ day of __, 20__

NOTARY PUBLIC

Name of Project

Project No.

STATE OF _____

PARISH OF _____

ATTESTATIONS AFFIDAVIT

Before me, the undersigned notary public, duly commissioned and qualified in and for the parish and state aforesaid, personally came and appeared Affiant, who after being duly sworn, attested as follows:

LA. R.S. 38:2227 PAST CRIMINAL CONVICTIONS OF BIDDERS

A. No sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes:

(a) Public bribery (R.S. 14:118)

(c) Extortion (R.S. 14:66)

(b) Corrupt influencing (R.S. 14:120)

(d) Money laundering (R.S. 14:230)

B. Within the past five years from the project bid date, no sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes, during the solicitation or execution of a contract or bid awarded pursuant to the provisions of Chapter 10 of Title 38 of the Louisiana Revised Statutes:

(a) Theft (R.S. 14:67)

(f) Bank fraud (R.S. 14:71.1)

(b) Identity Theft (R.S. 14:67.16)

(g) Forgery (R.S. 14:72)

(c) Theft of a business record
(R.S.14:67.20)

(h) Contractors; misapplication of
payments (R.S. 14:202)

(d) False accounting (R.S. 14:70)

(i) Malfeasance in office (R.S. 14:134)

(e) Issuing worthless checks
(R.S. 14:71)

LA. R.S. 38:2212.10 Verification of Employees

- A. At the time of bidding, Appearer is registered and participates in a status verification system to verify that all new hires in the state of Louisiana are legal citizens of the United States or are legal aliens.
- B. If awarded the contract, Appearer shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the state of Louisiana.
- C. If awarded the contract, Appearer shall require all subcontractors to submit to it a sworn affidavit verifying compliance with Paragraphs (A) and (B) of this Subsection.

Name of Project

Project No.

LA. R.S. 23:1726(B) Certification Regarding Unpaid Workers Compensation Insurance

- A. R.S. 23:1726 prohibits any entity against whom an assessment under Part X of Chapter 11 of Title 23 of the Louisiana Revised Statutes of 1950 (Alternative Collection Procedures & Assessments) is in effect, and whose right to appeal that assessment is exhausted, from submitting a bid or proposal for or obtaining any contract pursuant to Chapter 10 of Title 38 of the Louisiana Revised Statutes of 1950 and Chapters 16 and 17 of Title 39 of the Louisiana Revised Statutes of 1950.
- B. By signing this bid /proposal, Affiant certifies that no such assessment is in effect against the bidding / proposing entity.

NAME OF BIDDER

NAME OF AUTHORIZED SIGNATORY OF BIDDER

DATE

TITLE OF AUTHORIZED SIGNATORY OF BIDDER

**SIGNATURE OF AUTHORIZED
SIGNATORY OF BIDDER/AFFIANT**

Sworn to and subscribed before me by Affiant on the ____ day of _____, 20__.

Notary Public

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: University of New Orleans – Main Campus
Purchasing Office
Administration Annex, Room 1004G
New Orleans, Louisiana 70148
(Owner to provide name and address of owner)

BID FOR: QTB 2684 Tennis Court Conversion to Beach
Volleyball – East Campus

(Owner to provide name of project and other identifying information)

The undersigned bidder hereby declares and represents that she/he: a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: Holly and Smith Architects, APAC dated 12/10/21.
(Owner to provide name of entity preparing bidding documents.)

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) _____ .

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated “Base Bid” * but not alternates) the sum of:

_____ Dollars (\$ _____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1 (Provide and install sand for volleyball Courts) for the lump sum of:

_____ Dollars (\$ _____)

Alternate No. 2 (Owner to provide description of alternate and state whether add or deduct) for the lump sum of:

Not Applicable _____ Dollars (\$ _____)

Alternate No. 3 (Owner to provide description of alternate and state whether add or deduct) for the lump sum of:

Not Applicable _____ Dollars (\$ _____)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

LOUISIANA CONTRACTOR’S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____

THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

** **A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5).

BID SECURITY in the form of a bid bond, certified check or cashier’s check as prescribed by LA R.S. 38:2218(A) attached to and made a part of this bid.

UNIVERSITY OF NEW ORLEANS				PAYMENT REQUEST # _____		Page ____ of ____	
Project: _____				Contractor: _____			
SP# _____ SB# _____				Mailing Address: _____			
CHANGE ORDER SUMMARY				ORIGINAL CONTRACT SUM.....		\$ _____	
Change Order History		ADDITIONS		Net change by Change Orders.....		\$ _____	
Number	Date		DEDUCTIONS	CONTRACT SUM TO DATE.....		\$ _____	

TOTALS				TOTAL COMPLETED & STORED TO DATE.....		\$ _____	
				(See Schedule of Values)			
Net Change by Change Orders				RETAINAGE _____%.....		\$ _____	
				TOTAL EARNED LESS RETAINAGE.....		\$ _____	
				LESS PREVIOUS PAYMENTS/APPLICATIONS.		\$ _____	
				PAYMENT DUE THIS REQUEST.....		\$ _____	
I CERTIFY THAT THE GOODS OR SERVICES REFERENCED ON THIS INVOICE HAVE BEEN RENDERED AND PAYMENT OF THESE CHARGES IS ACCEPTABLE AS INDICATED BELOW.				CONTRACTOR:		DATE:	
DATE RECEIVED: _____				ARCHITECT:		DATE:	
DEPARTMENT CHAIRMAN/				FS:		DATE:	
AUTHORIZED REPRESENTATIVE: _____							
_____ APPROVED WITHOUT EXCEPTION							
_____ APPROVED WITH EXCEPTION(S) AS NOTED							
P.O. NO. _____ DATE _____ V# _____							
ACCOUNT NO. _____ OBJECT _____							
BPO _____ E.O. NO. _____ COMPLETE () PARTIAL ()							
APPROVED _____ DATE _____							

UNIVERSITY OF NEW ORLEANS

FS

PURCHASING

APPROVALS

UNIVERSITY OF NEW ORLEANS						SCHEDULE OF VALUES:		Page __ of __ Date:	
Project:						Contractor: Mailing Address:			
SP#		SB#		PO#					
A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		TOTAL COMPLETED AND STORED TO DATE		BALANCE TO FINISH	RETAINAGE	
			PREVIOUS APPLI	This Application Work In Place Stored Materials					
TOTALS									

AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Tennis Court Conversion to Beach Volleyball East Campus
6801 Franklin Ave.
New Orleans, LA

THE OWNER:

(Name, legal status and address)

The University of New Orleans
2000 Lakeshore Drive
New Orleans, LA 70148

THE ARCHITECT:

(Name, legal status and address)

Holly and Smith Architects, APAC
2302 Magazine St.
New Orleans, LA 70130
(504) 585-1315

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ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. The Contract Documents include the advertisement or invitation to bid, Instructions to Bidders, sample forms, and other information furnished by the Owner in anticipation of receiving bids or proposals.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.1.9 PERSISTENTLY

The phrase "persistently fails" and other similar expressions, as used in reference to the Contractor shall be interpreted to mean any combination of acts or omissions which cause the Owner or the Architect to reasonably conclude that the Contractor will not complete the Work within the Contract Time, for the Contract Sum, or in substantial compliance with the requirements of the Contract Documents.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. The Contractor and each subcontractor shall evaluate and satisfy themselves as to the conditions and limitations under which the Work is to be performed, including, without limitations (1) the location, condition, layout and nature of the Project site and surrounding areas (2) generally prevailing climatic conditions, (3) anticipated labor supply and costs, (4) availability and cost of materials, tools and equipment, (5) Owner's continued occupation and use of existing buildings throughout the year, and (6) other similar issues. The Owner assumes no responsibility or liability for the physical condition or safety of the project site or any improvements located on the project site. The Contractor shall be solely responsible for providing a safe place for the performance of the Work. The Owner shall not be required to make any adjustment in either the Contract Sum or Contract Time in connection with any failure by the Contractor or any subcontractor to comply with the requirements of this Subparagraph 1.2.2.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 Any reference to standards (such as ASTM – American Society for Testing and Materials), shall mean the latest edition of such standards, published prior to the date of the Specifications, in accordance with the abbreviations referred to in the Technical Provisions. Where such a reference is made, the applicable standard is hereby made a part of the Specification which refers to it to the same extent as if written out in that specification in full.

§ 1.2.5 In the event of a conflict or discrepancy between scaled dimensions and given dimensions, given dimensions shall take precedence over scaled dimensions. Although the Drawings are as much as practical drawn to scale, as indicated, and dimensions are given, in the case of remodeling or reconstruction work, or in fitting work to existing conditions, the Contractor shall work to measurements of existing conditions.

§ 1.2.6 In the event the Contractor, who has declared to the Owner by execution of the owner/contractor agreement that he has read, reviewed and familiarized himself with the Contract Documents and work site, has any question or believes a discrepancy exists between the Contract Documents and the Drawings, or has any question concerning any provision in the Contract Documents or Drawings, the Contractor is obligated to bring to question or discrepancy to the attention of the Owner and Architect prior to commencement of any work or subpart of work thereof.

§ 1.2.7 Should the Contractor fail to request interpretations of questionable items in the Contract Documents prior to executing the Work, neither the Owner nor the Architect will thereafter entertain any claim for additional costs or time.

§ 1.2.8 Where a discrepancy or inconsistency appears to exist between any of the Contract Documents regarding quantity or quality, or both, of labor and materials to be furnished for the Work, the greater quantity or higher quality shall govern and will be presumed to be included in the Contract Sum. When a general term conflicts with a more specific term, the more specific term governs. Interpretation of these requirements shall be solely determined by the Architect.

§ 1.2.9 Where a given material is indicated on any of the Drawings, it is intended that such material be used throughout the length and height of walls, partitions, spandrels, panels, windows, slights, or in the assembly detail in which it occurs, for other similar locations throughout the building or Project, unless another material is indicated.

§ 1.2.10 All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents.

§ 1.2.11 Test borings or soils test information, if made accessible to the Contractor, is not warranted by the Owner or Architect as an accurate or approximate indication of sub-surface conditions, and no claims for extra cost or extension of time resulting from a reliance by the Contractor on such information shall be allowed.

§ 1.2.12 Surveys of existing conditions executed for or on behalf of the owner is not warranted by the Architect.

§ 1.2.13 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents. The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form as outlined by the Architect.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in writing, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

(Paragraph deleted)

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require or (2) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (2) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, unless otherwise noted herein, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner may furnish surveys describing physical characteristics, legal limitations and the general location of utilities for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions and effort in locating utilities as well as executing safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services, properly describing such information or services needed.

§ 2.3.6 The contractor will be furnished, free of charge, up to two (2) copies of the drawings and the specifications on optical disk in electronic PDF (Portable Document Format) form. The Contractor is responsible for reproduction of the drawings and specifications for their use in executing the work as defined in the Contract Documents.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work or fails to promptly pay subcontractors and suppliers of the project in accordance with the Contract Documents and fails within a seven (7) day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of additional services made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. Should the contractor refuse to sign the change order, upon approval from the Architect, no signature shall be required, and the change order shall be binding.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2., shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor and shall be reported immediately in the form of a request for information in such form as the Architect may require. It is

recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall immediately report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations.

§ 3.2.5 The exactness of grades, elevations, dimensions, or locations given on any drawings issued by the Architect, or the work installed by other contractors, is not guaranteed by the Architect or the Owner. Field verification and coordination is required by the contractor as part of this agreement.

§ 3.2.6 The Contractor shall satisfy itself as to the accuracy of all grades, elevations, dimensions and locations. In all cases of interconnection of its Work with existing or other work, the Contractor shall verify at the site all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to so verify all such grades, elevations, dimensions or locations shall be promptly corrected by the Contractor without any additional cost to the Owner.

§ 3.2.7 The mechanical and electrical drawings are diagrammatic only and are not intended to show the exact physical locations or configurations of work. The contractor shall have a duty to provide all necessary coordination drawings as is required to properly install the work. Such work shall be installed to clear all obstructions, permit proper clearances for the work of other trades, and present an orderly appearance where exposed. Exact locations, if needed, of fixtures and outlets, and of all other devices visible in finished spaces, shall be obtained from the Architect before the work is roughed in; work installed without such information from the Architect shall be relocated at the Contractor's expense.

§ 3.2.8 Building materials to be incorporated into the Work shall either be certified, in writing, by the manufacturer to be asbestos free or be inspected and tested by accredited testing laboratories and certified to be free of asbestos content in accordance with applicable federal standards, including but not limited to the Asbestos Hazard Emergency Response Act (AHERA) and the Toxic Substances Control Act (TSCA). "Asbestos" means the Asbestiform varieties: Chrysotile (Serpentine), Crocidolite, Amosite (Cummingtonite, Grunerite), Anthophyllite, Tremolite and Actinolite. Materials discovered to contain asbestos shall be removed immediately at the Contractor's sole expense using current standards as set forth by authorities having jurisdiction.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and any entity or other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 The Contractor is the coordinator and expeditor of the total construction process and all its parts, in accordance with the Contract Documents. The Contractor shall provide sufficient supervisory staff in the field to enable efficient and expeditious handling of all matters. There shall be a Project Manager assigned by the Contractor in its home office, as well as in the field.

§ 3.3.5 The Contractor shall take all precautions necessary to prevent loss or damage caused by vandalism, theft, burglary, pilferage, or unexplained disappearance of property of the Owner, whether or not forming part of the Work, located within those areas of the Project to which the Contractor has access. The Contractor shall have full responsibility for the security of such property of the Owner for any such loss, damage, or injury, except such as may be directly caused by agents or employees of the Owner.

§ 3.3.6 The contractor shall retain a competent registered professional engineer or registered land surveyor, acceptable to the Owner and Architect, who shall establish the exterior lines and required elevations of all buildings and structures to be erected on the site and shall establish sufficient lines and grades for the construction of associated work including, but not limited to, roads, utilities, and site grading. The engineer or land surveyor shall certify the actual location of the constructed facilities in relation to property lines, building lines, easements, and other restrictive boundaries.

§ 3.3.8 The Contractor shall employ a competent Project Manager to administer and coordinate the work. The Contractor shall submit the resume of the Project Manager for this project prior to award of the contract for approval by the Architect. This Project Manager will be required to maintain an office on the job site and be available to the Owner or the Architect for review of the job conditions and all documentation required by the construction documents. The Project Manager shall have the following qualifications:

- .1 Capable of making financial binding decisions on behalf of the Contractor.
- .2 Capable of preparing Change Proposal Request Quotations on behalf of the Contractor.
- .3 Previous experience with at least five (5) projects of similar scope. The Architect shall have the sole authority in determining whether the Project Manager has such experience.
- .4 Capable of providing a minimum of five (5) references of architects and owners for projects of similar scope. Submit the following:
 - (a) Project name
 - (b) Project cost.
 - (c) Project location
 - (d) Architect's name and telephone number
 - (e) Owner's name and telephone number

§ 3.3.9 The Contractor shall establish the building grades, lines, levels, column, wall and partition lines required by the various subcontractors in laying out their work.

§ 3.3.10 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work. The word "provide" including derivatives shall mean to properly fabricate, complete, transport, deliver, install, erect, construct, test and furnish all labor, materials, equipment, apparatus, appurtenance, and all items and expenses necessary to properly complete the work in accordance with the terms of the Contract documents and specifications, and ready for operation or use under the terms of the Specifications.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with the procedures outlined herein.

§ 3.4.2.1 The Contractor may furnish equal brand products or equipment other than those specified in the Contract Documents, if allowed by the Contract Documents, provided the Contractor submits for prior approval a particular product other than a product specified in the Contract Documents no later than ten (10) calendar days prior to the date

for the opening of the bids and the Architect issues an addendum providing approval of the product or equipment submitted. The name of a certain brand, make, manufacturer or definite specification is to denote the quality standard of the article desired; sets forth the general style, type, character; and is regarded merely as a standard. However, a Contractor must furnish the certain brand, or a particular brand set forth in the Contract Documents or a product approved prior to the bid opening.

In projects not subject to the Public Bid Law, after the Contract has been executed, the Owner and the Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 1 of the Specifications).

§ 3.4.2.2 By making requests for substitutions based on Subparagraph 3.4.2.1 above, the Contractor:

- .1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified.
- .2 represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified.
- .3 certifies that the cost data presented is complete and includes all related costs under this Contractor except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
- .4 will coordinate the installation of the accepted substitutes, making such changes as may be required for the Work to be completed in all respects.

§ 3.4.2.3 Should the Contractor propose a substitute material or method assembly that is of questionable quality to the Architect, suitable tests may be required to establish a basis for acceptance or rejection. Such test will be paid for by the Contractor and conducted in accordance with Article 13.5, Test and Inspections.

§ 3.4.2.4 The term "or approved equal" is not necessarily limited to the physical or technical properties of the product or material but encompasses the finish, color, texture and other pertinent qualities in like regard. Failure to satisfy in any one respect may result in rejection of the substitute product(s).

§ 3.4.2.5 If, after execution of the Contract and prior to submittal of applicable shop drawings, the Contractor desires to submit an alternate product in lieu of what has been specified or shown in the Contract Documents, the Contractor may do so in writing and as set forth in the following:

- .1 Reasons the substitution is necessary to include a full explanation of the proposed substitution and submittal of all supporting data including technical information, catalogue cuts, warranties, test results, installation, instructions, operating procedures, and other like information necessary for complete evaluation of the substitution.
- .2 An affidavit stating that the Contractor accepts the warranty and correction obligations in connection with the proposed substitution as if originally specified by the Architect.

§ 3.4.2.6 Proposals for substitutions shall be submitted electronically and if a physical sample is required, a minimum of two samples shall be submitted to the Architect in sufficient time to allow the Architect no less than ten (10) working days for review. No substitutions will be considered or allowed without the Contractor's submittal of complete substantiating data and information as stated herein.

§ 3.4.2.7 Substitutions or alternates submitted in accordance with the Subparagraph 3.4.2.5 above may be rejected without explanation and will be considered only under one or more of the following conditions:

- .1 Required for compliance with interpretation of code requirements or insurance regulations then existing.
- .2 Unavailability of specified products, through no fault of the Contractor.
- .3 Subsequent information discloses inability of specified products to perform properly or to fit in designated space; or
- .4 Manufacturers/fabricator refuses to certify or guarantee performance of specified product as required.

§ 3.4.2.8 Any additional cost, including redesign costs or any loss or damage arising from the substitution of any product, material or equipment for those originally specified, including cost of changes of all other work affected by the substitution, shall be borne by the Contractor, notwithstanding approval or acceptance of such substitution by the Owner or the Architect, unless such substitution was made at the written request or direction of the Owner or the Architect.

§ 3.4.2.9 The Contractor shall only employ labor on the Project or in connection with the Work capable of working harmoniously with all trades, crafts and any other individuals associated with the Project. The Contractor shall also use its best efforts to minimize the likelihood of any strike, work stoppage or any other labor disturbance.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the contract and the work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them and shall immediately remove from the work any unfit person or persons not skilled in the task assigned to them. If in the opinion of the Architect or the Owner, the contractor is not enforcing discipline and good order among the contractor's employees and other persons carrying out the contract, he shall notify the contractor of such instances in writing. Should such instances persist, then the architect shall request in writing that the employee or other person carrying out the work be removed from the project site. The Architect's decision on this matter is final and binding. In the case of zero tolerance policies outlined by the Owner, there is no requirement for notice, the person identified as violating the policy shall immediately leave the premises. The Architect's decision on this is final and binding.

§ 3.4.4 The Contractor shall be bound by the requirements as set forth in La. R.S. 38:2212.10 which includes but is not limited to requiring all bidders on public contracts for public works to certify that they are enrolled for and actually utilize during the duration of the contract the federal "E-Verify" system to verify the status of employees as legal citizens of the United States of America or legal aliens present in the country. The Contractor shall provide a sworn affidavit executed by the Contractor certifying compliance.

§ 3.5 Warranty

§ 3.5.1 Unless noted for longer periods in the contract documents, provide a one (1) year warranty on all labor and materials provided under this contract. The Contractor shall warrant to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.5.3 The Contractor shall secure any and all written warranties or guarantees referred to in respective specifications sections. As a condition precedent to its right of final payment, Contractor shall deliver to the Architect for review and transmittal to Owner two copies of all manufacturer's warranties or guarantees, operational manuals and instructions, service contracts and other warranties or guarantees as required. The Contractor shall require each Subcontractor to execute a satisfactory written warranty or guarantee in which the Contractor and the Owner are named as beneficiaries

§ 3.5.4 If during the warranty period the contractor is notified of a warranty matter, the warranty on that item shall automatically extend one additional year from the date in which the contractor repaired or replaced the warranty item. The contractor shall be required to report this date, in writing, to the Owner and Architect. In the absence of written notification, the Architect shall establish the date.

§ 3.5.4 Any warranty provided in paragraph 3.5.1 shall be in addition to and not in limitation of any other warranty required by the Contract Documents or otherwise prescribed by law.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. While it is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. If the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall immediately notify the Architect and Owner in writing, and necessary changes shall be accomplished by appropriate modification(s).

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to or taken from the superintendent shall be as binding as if given to or taken from the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

(Paragraph deleted)

§ 3.10.1 The Contractor shall prepare and submit within ten (10) working days of the date of the Notice to Proceed, for the Owner's and Architect's information, a Construction Schedule. At the request of the Owner or the Architect the Contractor shall make this submission in digital native format for review purposes. The Construction Schedule shall be a detailed schedule as outlined in Division One (1):

- .1 Provide a graphic representation of all activities and events that will occur during the performance of the Work;
- .2 Identify each phase of construction and occupancy;
- .3 Set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents. If not accepted, the Construction Schedule shall be promptly revised by the Contractor in accordance with the recommendation of the Owner or Architect and resubmitted for acceptance;
- .4 The Contractor shall monitor the progress of the Work for conformance with the requirements of the Construction Schedule and shall promptly advise the Owner and Architect of any delays or potential delays. In addition, the contractor shall provide an updated Construction Schedule to reflect actual conditions with each Application for Payment or if requested by either the Owner or the Architect. In the event the progress report indicates any delays, the Contractor shall take corrective measures necessary to expedite the progress of the construction, including without limitations, (1) working additional shifts or overtime, (2) supplying additional manpower, equipment and facilities, and (3) other similar measures. Any such measures are solely for the purpose of ensuring the Contractor's compliance with the Contract Time allowed by the Contract Documents. The Contractor shall not be entitled to any adjustment in the Contract Sum in connection with such measures. In no event shall any progress report constitute an adjustment in the Contract Time or the Contract Sum unless such an adjustment is agreed to by the Owner and authorized pursuant to a written Change Order;
- .5 For projects with a contract sum greater than \$3,000,000.00, the Contractor shall include with the schedule, for the Owner's and Architect's information, a network analysis to identify those tasks which are on the critical path, i.e. where any delay in the completion of these tasks will lengthen the project timescale, unless action is taken;
- .6 Any revision or update to the schedule will be subject to the written approval of the Owner; and

- .7 All revisions shall be submitted in PDF format and at the request of the Owner or Architect the Contractor shall submit the digital version in native format that is reviewable using the software that created the schedule.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent acceptable schedule submitted to the Owner and Architect that is complete and executed in a format that meets the actual conditions at the site.

§ 3.10.4 The Owner shall reserve the right to direct a postponement or rescheduling of any date or time for the performance of any part of the Work that may interfere with the operation of the Owner's premises. The Contractor shall, upon the Owner's request, reschedule any portion of the Work affecting the Owner's operation of the premises during the hours when the premises are not in operation.

§ 3.10.5 The Contractor shall prepare and keep current, for the Architect's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Architect reasonable time to review submittals.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work prior to final payment.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

(Paragraphs deleted)

§ 3.12.10 When professional certification of performance criteria of materials, systems, or equipment is required by the Contract Documents, the Contractor shall provide the person or party providing the certification with full information on the relevant performance requirements and on the materials, systems, or equipment that are expected to operate or be utilized at the Project site. The certification shall be based upon performance under the operating conditions generally prevailing or expected at the Project site. The Architect shall be entitled to rely upon the accuracy and completeness of such certificates.

§ 3.12.10.1 The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.12.11 All shop drawings for any architectural, structural, mechanical or electrical work must be submitted to and approved by the Architect. The Contractor represents and warrants that all shop drawings shall be prepared by persons and entities possessing the expertise and experience in the trade for which the shop drawings are prepared and, if required by the Architect or applicable law, by a licensed engineer. Any shop drawing that indicates insufficient study of drawings and specifications, illegible portions, or gross errors, will be rejected outright and the Owner will require that the Contractor resubmit such drawing in a manner consistent with the information contained in the Contract Documents. Such rejections, if any, shall not constitute a reason for granting Contractor additional time to perform the work involved.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.1 The right of possession of the premises and the improvements made thereon by the Contractor shall always remain the property of the Owner. The Contractor's right to entry and use thereof arises solely from the permission granted by the Owner under the Contract Documents. The Contractor shall confine its apparatus, the storage of materials and the operations of its workmen to limits indicated by law, ordinances, the work limits and staging area as shown on Site Plan (if shown), and areas made available by the Owner, and shall not unreasonably encumber the premises with its materials or equipment. Only materials and equipment which are to be used directly in the Work shall be brought and stored on the Project site by the Contractor. Protection of construction materials and equipment stored at the Project site from weather, theft, damage and all other causes is solely the responsibility of the Contractor.

§ 3.13.2 The Contractor and any entity for whom the Contractor is responsible shall not erect any sign on the Project site without the prior written consent of the Owner, which consent may be withheld in the sole discretion of the Owner.

§ 3.13.3 Contractor shall ensure that the Work, at all times, is performed in the manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. All public areas adjacent to the site of the Work shall be free from all debris, building materials, and equipment likely to cause hazardous conditions. Contractor shall use its best efforts to not interfere with the occupancy of (1) any area and buildings adjacent to the site of the Work or (2) the building in the event of partial occupancy.

§ 3.13.4 Without the prior written approval of the Owner, the Contractor shall not permit any workers to use any existing facilities at the Project site, including, without limitation, lavatories, toilets, entrances, parking areas and other similar items other than those designated by the Owner.

§ 3.13.5 The Contractor shall repair at its own expense any damage from operations under its supervision or direction caused to Owner's property and facilities on the site and access routes thereto.

§ 3.13.6 The Contractor shall take all precautions necessary to prevent loss or damage caused by vandalism, theft, burglary, pilferage or unexplained disappearances of property of the Owner, whether or not forming part of the Work, located in the areas of the Project in which the Contractor has access. The Contractor shall provide for the security of the Owner's property to prevent any such loss, damage or injury except as may be directly caused by agents or employees of the Owner.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so, and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties, license, and fees and defend all suits or claims for infringement of any patent rights and save the Owner harmless on account thereof and shall protect and indemnify the Owner against any and all present and future, royalties or claims resulting from the installation or utilization by the Contractor during the course of this work of any patent, articles, process or design(s).

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 3.19 FAILURE TO PERFORM WORK

§ 3.19.1 The Contractor shall be liable to the Owner for all costs or damages, which the Owner incurs as a result of Contractor's failure to perform the Work, or any part thereof, in accordance with the Contract Documents. Contractor's failure to perform shall include, but not be limited to, the failure of its subcontractors and/or suppliers of any tier to perform. The Contractor's liability to Owner shall include, but not be limited to, (1) the increased cost of performance, including services of the Architect and other consultants resulting from the Contractor's failure to comply with the Contract Documents; (2) costs of corrective or warranty work; (3) liability to third parties.

§ 3.20 LIENS

§ 3.20.1 In the event a lien is filed by anyone in relation to the Work, the Owner shall have the right (1) to require the Contractor to furnish the Owner a release of lien or claim recorded by the person or entity filing the lien; (2) to require Contractor to discharge the lien by posting a bond with the Clerk of court for the parish in which the project is located within five calendar days of notice by the Owner to the contractor; and/or (3) to retain out any payment due or thereafter to become due, an amount sufficient to indemnify the Owner against any lien or claims of lien, including bond premiums and attorney fees and to apply the same in such manner as Owner deems necessary to protection and/or satisfy such claims and liens. In the event such lien is not discharged. The Owner may require the Contractor at its sole cost and expense including attorney fees, to hold harmless and defend the Owner of and from any and all claims, lawsuits, causes of action, and demand of any person or entity asserting or claiming any right as a result of any lien or claim, recorded or unrecorded against the contractor for default or to bond off said lien(s) and recover from Contractor all costs incurred as a result thereof, including, but not limited to bond premiums and attorney fees. Prior to receipt of partial or final payment, as appropriate, Contractor shall provide Owner a partial or final release of its liens and claims and partial and final releases of all liens and claims of all persons furnishing labor and/or materials to the Work with satisfactory evidence that there are no other liens or claims whatsoever outstanding against the Work. This subparagraph shall not apply if the Owner is not current in payment of properly certified pay applications.

§ 3.21 WORK RELATED TO EXISTING FACILITIES

§ 3.21.1 The Contractor shall not perform work in existing buildings which will interfere with normal operations, or normal traffic flow or produce excessive noise without twenty-four (24) hours written notice to the Owner and then only with their concurrence. Security of the Owner's property may require the services of a guard during nights or weekends if required by the nature of the work at no additional cost to the Owner.

§ 3.22 INDEPENDENT CONTRACTOR/STATUTORY EMPLOYER

§ 3.22.1 The Contractor shall at all times be construed under this agreement as an independent contractor unless otherwise agreed upon in writing. This agreement shall not be considered to create a joint venture, partnership or legal relationship between the Owner and the Contractor by which either party shall share or be responsible for the debts and liabilities of the other party. Nor shall this agreement be construed as giving the right to one party to legally bind the other in any manner or to be able to incur any debts and liabilities on behalf of the other.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of the Work and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. No payments will be made to the Contractor until the information required herein is received and processed by the Architect and the Owner.

§ 5.2.2 The Contractor shall be solely responsible for selection and performance of all subcontractors. The Contractor shall not be entitled to claims for additional time and/or increase in the Contract Sum due to a problem with performance or non-performance of a subcontractor

§ 5.2.3 The Contractor shall notify the Owner and Architect in writing when a subcontractor is to be changed and substituted with another subcontractor.

§ 5.2.4 The Contractor shall not contract with a proposed person or entity to whom the Owner, the Owner's Program Manager (If applicable) or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.5 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Time shall be allowed for such change.

§ 5.3 Subcontractual Relations

All Work performed for Contractor by a Subcontractor or a sub-subcontractor will be pursuant to an appropriate agreement between Contractor and Subcontractor or Subcontractor and sub-subcontractor which specifically binds the Subcontractor or sub-subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the Owner and Architect and contains applicable waiver of subrogation provisions.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor, and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for any length of time,, the Subcontractor's compensation shall not be adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. Each subcontract shall specifically provide that the owner shall only be responsible to the subcontractor in the event of the exercise of an assignment for those obligations of the contractor that accrue subsequent to the owner's exercise of any rights under this conditional assignment.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to

those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

(Paragraph deleted)

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

(Paragraph deleted)

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 The Contractor shall be due extended overhead for time delays only when complete stoppage of work occurs causing a contract completion extension. The stoppage must be due to acts or omissions solely attributable to the Owner. In all cases, the contractor is to notify the Architect in writing along with backup data, schedules and information proving the claim within 14 days of the occurrence.

§ 7.2.3 The amount of overhead and profit allowed for a change order is as outlined as follows:

- .1 For the Contractor, for Work performed by the Contractor's own forces, ten (10%) percent of the cost.
- .2 For the Contractor, for Work performed by the Contractor's Subcontractor; five (5%) percent of the due the Subcontractor.
- .3 For each Subcontractor or Sub-subcontractor involved; for Work performed by that Subcontractor's or Sub-subcontractor's own forces ten (10%) percent of the cost.
- .4 For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, five (5%) percent of the amount due the Subcontractor.
- .5 Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.4.
- .6 In order to facilitate checking of quotations for additions or deletions to the contract sum, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials, and subcontracts. The contractor shall use the format as prescribed by the Architect. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over \$1,000 be approved without such itemization.

§ 7.2.4 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work which is the subject of the Change order, including, but not limited to all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive may be used in the absence of total agreement on the terms of a Change Order. A Construction Change Directive may also be used to document the amount of liquidated damages or the additional fees due the Architect due to additional services incurred.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and

profit as set forth in Section 7.3.11 below, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change. If other work is simultaneously taking place, overall project management and supervision shall not be included in this cost.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change. Any credit to the owner shall be the sum of the materials, labor, incidentals and subcontract cost. The owner shall not be due any credit for overhead and profit due from any contracting entity.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the work shall be included in Applications for Payment accompanied by a Change Order indicating the parties agreement with such costs.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.3.11 In Subparagraph 7.3.4, the allowance for the combined overhead and profit included in the total cost to the Owner shall be as outlined in Subparagraph 7.2.2.2.

§ 7.3.11 Any credit to the Owner resulting from a change in the Work shall be the sum of:

- .1 Contractor's material and labor cost.
- .2 Subcontractor's and/or Sub-subcontractor's material and labor cost.

Credit will not be required for overhead and profit.

§ 7.3.12 In any Change Order, no allowance or itemization of costs shall be allowed for salaries or other compensation of the Contractor's personnel at the Contractor's principal office and branch offices; any part of the Contractor's capital expenses, including interest; overhead and general expenses of any kind not included above in cost of the work;

cost of supervision not specifically required by the Change Order; and costs due to negligence, including but not limited to correction of defective or nonconforming work.

§ 7.3.13 Claims for cost associated with expenses incurred due to delay of the work such as daily expenses of general conditions shall not be allowed unless the owner requests in writing the Contractor cease construction operations.

§ 7.3.14 Agreement on any Change Directive shall constitute a final settlement of all matters relating to the change in the Work which is the subject of the Change Directive, including, but not limited to all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the Contract Time.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established by the written "Notice to Proceed". The date shall not be postponed by the failure to act of the Contractor or of persons or entities whom the Contractor is responsible.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.1.1 Contract Time is subject to such extensions as may be granted under Section 8.3. The Owner's operations will be impacted and delayed if the Project is not substantially complete within the time set forth in the Contract Documents. The Contractor and the Contractor's Surety shall be liable for and shall pay to the Owner the sum stated in the Contract Document as fixed, agreed and liquidated damages for each consecutive calendar day (Saturdays, Sundays and holidays included) of delay until the Work is substantially complete or, as applicable, until the Work is finally complete. The Owner shall be paid the sum(s) stated in the Contract Documents for liquidated damages. Such Liquidated Damages shall be withheld by the Owner from the amounts due to the Contractor for the progress payments and deducted from the Contract sum by a Construction Change Directive signed only by the Owner and Architect.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented

in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.1.1 The Contractor acknowledges and agrees that adjustments in the Contract Time will be permitted for a delay only to the extent such delay (1) is not caused or could not have been anticipated by the Contractor, (2) could not be limited or avoided by the Contractor's timely notice to the Owner of the delay, (3) is of a duration not less than one (1) day, (4) affects the critical path of the progress of the Work, and (5) is not concurrent in the judgment of the architect with other work that is being executed.

§ 8.3.1.2 An extension of Contract Time, to the extent allowed under Paragraph 8.3, shall be the sole remedy of the Contractor for any (1) delay in the commencement of the Work, (2) hindrance or obstruction in the performance of the Work, (3) loss of productivity, unless a delay is caused by acts of the Owner which interfere with the Contractor's performance of the Work and only to the extent that such acts continue after the contractor furnishes the Owner and Architect with written notice of such interference. In no event shall the Contractor be entitled any indirect cost, consequential damages, lost opportunity costs, impact damages or other similar claims. The Owner's exercise of any of its rights or remedies under the Contract Documents such as ordering changes in the Work, suspension, or correction of the Work, shall not be construed as an act of interference with the Contractor's performance of the Work.

§ 8.3.1.3 If adverse weather conditions are the basis for a claim for additional time, the Contractor shall document that weather conditions had an adverse effect on the scheduled construction. An increase in the contract time due to weather shall not be cause for an increase in the contract sum.

The following are considered reasonably anticipated days of adverse weather on a monthly basis:

January	11 Days	July	6 Days
February	10 Days	August	5 Days
March	8 Days	September	4 Days
April	7 Days	October	3 Days
May	5 Days	November	5 Days
June	6 Days	December	8 Days

NOTE: Contract is on a calendar day basis.

The Contractor shall ask for total adverse weather days, the Contractor's request shall be considered only for days over the allowable number of days stated above.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15. If the claim is not made within the time limits as outlined in Article 15, all right for future claims are waived.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

§ 8.3.4 If the Contractor submits a progress report indicating, or otherwise indicating an intention to achieve, completion of the Work prior to any completion date required by the Contract Documents or indicates expiration of the Contract Time, no liability of the Owner to the Contractor shall exist.

§ 8.4 LIQUIDATED DAMAGES

§ 8.4.1 Time is of the essence in completing the Work, and, in the event of delay on the part of the Contractor in completing the Work as specified beyond the date set forth in the Contract Documents as adjusted by Change Orders, it is distinctly understood and agreed that a deduction shall be made from the Contract Sum at a rate as stated in the Bid Proposal form plus any compensation for the Architect's services and expenses made necessary for each and every day of delay until the Work is complete. This is not a penalty but agreed upon liquidated damages for delay. The calculations shall be for each and every calendar day exclusive of the day within which completion was required and up to and including the date of completion of the Work as determined by the Architect and Owner. The expiration of the time stipulated without the work having been completed shall in itself constitute a default without the necessity of

any notice being given to the Contractor of its Surety. The Contractor and its Surety agree that the above referenced sum shall be deducted at any time in the sole discretion of the Owner from the contract Sum by means of a written adjustment executed by the Owner without the contractor's signature, it specifically having been agreed upon in advance as a measure of damage to the Owner on account of the Contractor's delay.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. Payments for materials or equipment stored on the site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, including applicable insurance and shall reflect retainage as follows:

- .1 Projects with contract price up to and including \$500,000.00 – 10% of the contract price.
- .2 Projects with contract price of \$500,001.99 or more – 5% of the contract price.
- .3 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

(Paragraphs deleted)

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest and shall include applicable insurance, storage, and transportation to the site for such materials and equipment stored off the site. This decision to allow this condition lies solely with the owner.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- .7 repeated failure to carry out the Work in accordance with the Contract Documents;
- .8 correction of defective work by Owner or completion of the work by the Owner;
- .9 belief or knowledge by the Architect of an occurrence of an event justifying termination for cause; or
- .10 failure to complete the punch list within 45 days of substantial completion.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents and shall so notify the Architect. Provided, however, the Owner may refuse to make payment of amount recommended by the Architect and the Owner may withhold from any payment an amount based on:

- .1 The Owner's estimate of the value of any claim it has asserted against the Contractor.
- .2 125% of the amount of any lien or affidavit of claim that have been filed in the Mortgage Records.
- .3 Other items such as liquidated damages which allows the Owner to withhold or set-off against any amount due the Owner under this agreement.
- .4 Funds due as a result of additional services of the Architect that are due as outlined in this agreement.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect and / or the Owner will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid and shall have the right to withhold payment to the contractor until such information is received. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

(Paragraphs deleted)

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.1.1 The Work will not be considered suitable for Substantial Completion review until all Project Systems included in the Work are operational as designed and scheduled; designated instruction of the Owner's personnel in

the operation of the systems has been completed and all finishes within the Contract Documents are in place. In general, the only remaining Work shall be minor in nature, so that the Owner could occupy the building on that date and the completion of the Work by the Contractor would not materially interfere with or hamper the normal business operations of the Owner. As a further condition of Substantial Completion acceptance, the Contractor shall certify that all remaining Work will be completed within forty-five (45) consecutive calendar days or as otherwise agreed upon in writing following the Date of Substantial Completion.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The contractor shall be responsible for coordinating a review of the project by all authorities having jurisdiction and respond in writing to the Owner and Architect the findings of the authorities having jurisdiction. When the Certificate of Substantial Completion is executed by all parties, the contractor shall at his expense record the Certificate of Substantial Completion at the Clerk of Court's office of the jurisdiction in which the project is located and shall provide the recordation information to the Owner and the Architect. The time for the correction period shall begin on the date the Certificate of Substantial Completion is dated by the Architect as substantially complete.

§ 9.8.3 Upon receipt of the Contractor's completion list, the Architect will make a review to determine whether the Work or designated portion thereof is substantially complete. A prerequisite to the Work being accepted as substantially complete, is the Owner's receipt of the executed Roofing Contractor's and Roofing Manufacturer's guarantees, where roofing work is part of the Contract. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use, the Contractor shall, before acceptance of the Work as Substantially Complete, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another review by the Architect to determine Substantial Completion. In no event shall acceptance of the work, or a part thereof, as substantially complete, constitute a right of Contractor to payment under the Contract for work not yet performed by the Contractor. More than one request by the Contractor for review for Substantial Completion by the Architect shall result in additional services billed by the Architect to the Owner and the Architect shall charge at a rate of \$175.00 for each hour of service and deducted by the Owner from any remaining Contract funds. The contractor further agrees that funds to reimburse the Owner and the Architect for time and expenses incurred, may be withheld from the contractor's payments due from the owner, without the need to execute a change order.

§ 9.8.3.1 Upon receipt of the Contractor's list, a "punch list" of exceptions and the dollar value of each item will be prepared by the Architect. The monetary value assigned to this list will be 125% of the estimated actual value of the items to be completed or corrected. No funds assigned to this list shall be due the Contractor until all punch list items are completed and are accepted by the Architect. If the dollar value of the punch list, less the retainage amount exceeds the remaining Contract Sum, then the Project shall not be accepted as substantially complete. If delivery of material or equipment, required as part of the punch list work, is beyond the control of the Contractor, the Contractor's completion time shall be extended at no additional cost to the Owner. Failure by the Contractor to order needed material in a timely fashion shall not be a reason to extend the time. Unless extended, if all punch list items have not been completed by the end of forty-five (45) days from the Substantial Completion date through no fault of the Architect or Owner, the Contractor shall pay to the Owner Liquidated Damages in the amount specified in the Contract Documents for each and every calendar day after the date that the Final Completion of the Work is not met plus the expenses of the Architect as provided hereafter and the Owner may hold the Contractor in default. If the Owner finds the Contractor is in default, the Surety shall be notified. If within thirty (30) days after notification the Surety has not completed the punch list, the Owner may at its option, contract to have the balance of the work completed and pay for such work with the unpaid funds remaining in the Contract Sum. If the Surety fails to complete the punch list within the stipulated time period, the Owner may not accept Bonds submitted in the future by the Surety. All of the services of the Architect to inspect and provide any administration of the Contract in accordance with the Contract Documents after the expiration of the time for the Contractor to complete the punch list shall be paid by the Contractor at a rate of \$175.00 for each hour of service and deducted by the Owner from any remaining Contract funds. The contractor further agrees that funds to reimburse the Owner and the Architect for time and expenses incurred, may be withheld from the contractor's payments due from the owner, without the need to execute a change order.

§ 9.8.4 The Certificate of Substantial Completion from the Architect shall include as an attachment the list of corrective items (punch list) to be completed by the Contractor, together with the estimated cost of completing such corrective items. In addition, the Certificate of Substantial Completion shall designate that the Contractor shall complete the list of corrective items within forty-five (45) days of the date of the Architects issuance of Substantial Completion (date of issuance). At the end of the forty-five (45) day period, without further notice to Contractor, the Owner shall have the option of either completing the items identified on the list of corrective items (punch list) and retaining the cost of the work done, including any additional architect fees from the Contract Sum, or calling on the Surety to complete the corrective items under the performance bond and/or labor and material payment bond. The contractor agrees to pay for all time and expenses incurred by the owner and the architect after the termination of the forty-five (45) days corrective period. The contractor further agrees that funds to reimburse the Owner and the Architect for time and expenses incurred, may be withheld from the contractor's payments due from the owner, without the need to execute a change order.

§ 9.8.5 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work (date of issuance) or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.6 Warranties required by the Contract Documents shall commence on the Date of Substantial Completion of the Work unless otherwise agreed to in writing by the Owner and Contractor. Unless otherwise agreed to in writing by the Owner and Contractor, security, maintenance, heat, utilities, damage to the Work not covered by the punch list, and insurance shall become the Owner's responsibility on the Date of Substantial Completion.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. If the Architect does not find the work acceptable under the Contract Documents, the Architect shall make one additional review; if the Work is still not acceptable, the Architect and each of the Architect's principal consultants, shall be paid \$175.00 per hour for their time, each additional inspection, to be withheld from the unpaid funds remaining in the Contract Sum. The payments shall be made by the Owner and deducted from the construction contract funds, without having to execute a change order.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. (7) A Certificate from the Clerk of Court for the jurisdiction in which the project is located which shall be dated at least forty five (45) days subsequent to the date of recordation in the same office of the acceptance of Substantial Completion for the Owner and to the effect that no liens or claims for labor or materials have been recorded against the project, (8) all warranties and guarantees required under or pursuant to the Contract Documents, for review and acceptance by the Owner as part of the Final Application for Payment, (9) all operation manuals and training of Owner's staff in the operation of mechanical, electrical, heating, air conditioning and specialty equipment, and (10) reproducible drawings (as-builts) approved by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents;
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment; or
- .5 any warranty required by law.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment. If upon final inspection of the work, it shall be found by the Owner that the plans, specifications, contract or change order for the work has not been fully completed, the Owner shall, until such compliance shall have been affected or adjustments satisfactory to it shall have been made, refuse to direct final payment.

§ 9.11 LIQUIDATED DAMAGES

§ 9.11.1 The Contractor and the Contractor's Surety, if any, shall be liable for and shall pay the Owner the sums stipulated in Subparagraph 8.4.1 as liquidated damages for each calendar day of delay until the Work is determined to be complete by the Architect and Owner.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

§ 10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor expressly agrees that it is exclusively

responsible for compliance with the Occupational Safety and Health Act (OSHA) and state and local regulations for construction and that it is the "employer" within the meaning of those regulations. It is the express intent of the parties that the contractor, and not the Architect, nor the Owner, is in charge of the Work. Any provision in the Contract Document in conflict with this paragraph shall be null and void.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction; and
- .4 the indoor air quality of buildings and adjacent occupied buildings.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. In all cases the Contractor shall adhere to all safety requirements for storage of materials of any type.

§ 10.2.5 The Contractor shall promptly remedy damage and loss to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.5.1 Any fines levied against the Owner due to the Contractor's (or its subcontractor's) failure to comply with OSHA standards or other Federal, State, and local regulations shall be paid by the Contractor. If any such fines are not promptly paid, then the amount of the fine may be withheld by the Owner from payment to the Contractor.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect in writing of the condition.

§ 10.3.2 In the Event the Contractor encounters on the site material reasonably believed to be asbestos, lead, or polychlorinated biphenyl (PCB) which has not been rendered harmless, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and Architect in writing. The Work in the affected area shall not thereafter be resumed except by written agreement of the Owner and Contractor if in fact the material is asbestos, lead, or polychlorinated biphenyl (PCB) and has not been rendered harmless. The Work in the affected area shall be resumed immediately following the occurrence of any one of the following events (1) the Owner causes remedial Work to be performed which results in the absence of asbestos, lead or polychlorinated biphenyl (PCB), or (2) the Owner and the Contractor by written agreement, decide to resume performance of the Work, or (3) the Work may safely and lawfully proceed as determined by an appropriate governmental authority or as evidence by a written report to both the Owner and Contractor which is prepared by an environmental engineer. In no event, however, shall the Owner have any responsibility for any substance or material that is brought to the project site by the Contractor or any subcontractor, any materialmen, or supplier, or any entity for whom any of them is responsible. The Contractor agrees not to use any fill or other materials to be incorporated into the Work which are hazardous, toxic or comprised of any items that are hazardous or toxic.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs, including attorney and consultant fees of any kind or type (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

(Paragraph deleted)

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

The following requirements apply to all insurance and bonds required under ARTICLE 11:

- .1 Insurance and Bonds provided by the Contractor shall be with a reliable company of the Contractor's choice, acceptable to and approved by the Owner and authorized to do business in the state where the project is located. Company must be rated by Best as follows:
 - (a) Performance and Payment (A-) Class V,
 - (b) All other insurance (A-), Class V,
- .2 The Contractor shall have the policies endorsed to reflect and insure any occupancy by Owner at the time of such occupancy.
- .3 All liability policies referred to in this Article shall be maintained within the same company

§ 11.1.2 The Contractor shall provide surety bonds when required by the Contract Documents of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents; the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.1.5 **General Conditions:** The following General Conditions apply to all insurance under Article 11:

- .1 Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work hereunder by the Contractor, his agents, representatives, employees and subcontractors. The cost of such insurance shall be included in the Contractor's bid.
- .2 Insurance provided by the Contractor shall be with a reliable company with an A.M. Best's rating of no less than A-, acceptable to and approved by the Owner, and authorized to do business in local in which the project is located.
- .3 The Owner and Architect must be included as additional insured on the general liability policy.
- .4 All liability insurance policies (General Liability, Auto Liability, Worker's Compensation & Umbrella Liability) must be endorsed to a waiver of subrogation in favor of the Owner and Architect.
- .5 Each policy shall contain a provision signed by the agent of the company stipulating that the policy will not be canceled without thirty (30) days prior written notice to the Owner.
- .6 Any and all policy deductibles shall be paid by the Contractor.
- .7 All certificates of insurance shall be delivered to the Owner within ten days of the award of the Contract by the Owner. Bidders in submitting a proposal agree to submit certified copies of insurance policies to the Owner for review.
- .8 Claims made policies are not acceptable to the Owner and cannot be used to comply with insurance requirements of this Contract.

§ 11.1.5.1 All policies and certificates of insurance of the Contractor/Subcontractor shall contain the following clauses:

§ 11.1.5.1.1 The Contractor/Subcontractor's insurers will have no right of recovery or subrogation against the Owner, it being the intention of the parties that the insurance policies shall protect both parties, and Owner's insurance, if any, will not be utilized to cover any loss.

§ 11.1.5.1.2 The Owner shall be named as an additional insured by the Contractor (ISO Forms CG 20 10, Current form approved for use in the locale in which the project is located).

§ 11.1.5.1.3 The insurance companies issuing the policy or policies shall have no recourse against the Owner for payment of any premiums or for assessments under any form of policy.

§ 11.1.5.1.4 Any and all deductibles in the insurance policies shall be assumed by and be at the sole risk of the Contractor.

§ 11.1.5.1.5 Any deductibles or self-insured retentions must be declared to and approved by the Owner. At the option of the Owner, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Owner, its officers, officials, employees and volunteers; or the Contractor's bond shall guarantee payment of losses and related investigations, claim administration and defense expenses.

§ 11.1.6 INSURANCE

The Contractor/Subcontractor, prior to commencing work, shall provide at his own expense, proof of the following insurance coverage required by the contract to the Owner by insurance companies authorized in locale in which the project is located. Insurance is to be placed with insurers with an A.M. Best's rating of no less than A- This rating requirement will be waived for the workers' compensation coverage and policies written through Lloyds of London or Institute of London Underwriter (ILU) companies.

Thirty days prior notice of cancellation shall be given to the Owner by registered mail, return receipt requested, on all of the required coverage provided to the Owner. All notices will name the Contractor/Subcontractor and identify the contract number.

Insurance coverage specified in the GENERAL CONDITIONS (AIA Document A 201, 2007 Edition) to be provided by the Contractor, and any other insurance described below shall be furnished with the minimum limits indicated.

§ 11.1.6.1 Workers' Compensation:

Coverage A – Statutory benefits.

Coverage B – Employer's Liability for limits of:

Accident claims \$ 1,000,000 per occurrence

Sickness \$ 1,000,000 per occurrence

Insurance for federal worker injury statutes must be procured if exposure exists. This includes Longshoremen's & Harbor Workers Act, U. S. Maritime Liability, etc.

§ 11.1.6.2 Commercial General Liability Insurance with a combined single limit per occurrence for bodily injury and property damage. Insurance Service Office Commercial General Liability coverage ("occurrence") form CG 0001. (Current form approved for use in Louisiana.) "Claims Made" form is unacceptable. This insurance shall include coverage for bodily injury and property damage, and indicate on the Certificate of Insurance which of the seven (7) coverages required below are not included in the policy, if any:

- .1 Premises – Operations;
- .2 Broad Form Contractual Liability.
- .3 Products and Completed Operations
- .4 Use of Contractors and Subcontractors
- .5 Personal Injury;
- .6 Broad Form Property Damage
- .7 Explosion, Collapse and Underground (XCU) Coverage.

NOTE: On the certification of insurance, under the description of operations, the following wording is required: THE AGGREGATE LOSS LIMIT APPLIES TO EACH PROJECT, or a copy of ISO form CG2503 (Current form approved for use in Louisiana) shall be submitted.

COMBINED SINGLE LIMIT (CSL) – AMOUNT OF INSURANCE REQUIRED

Type of Construction	Projects Under \$100,000	Projects \$100,001 - \$1,000,000	Projects Over \$1,000,000
New Buildings:			
- Each Occurrence / Minimum Limit	\$500,000	\$1,000,000	\$3,000,000
- Aggregate (Applicable to this Contract ONLY)	\$500,000	\$1,000,000	\$3,000,000
Renovations: The building(s) value for this Project is: \$ (To be obtained from the Owner)			
- Each Occurrence / Minimum Limit	\$500,000*** (Depends on Building Value)	\$1,000,000*** (Depends on Building Value)	\$3,000,000*** (Depends on Building Value)
- Aggregate (Applicable to this Contract ONLY)	\$500,000*** (Depends on Building Value)	\$1,000,000*** (Depends on Building Value)	\$3,000,000*** (Depends on Building Value)

***While the minimum combined single limit of \$500,000 is required for all renovations, the value of a building shall be multiplied by 10% and insurance requirements will be increased at \$1,000,000 intervals and rounded to the nearest \$1,000,000. Example: Renovation on \$33,000,000 building would require \$3,000,000 minimum combined single limit of coverage. Maximum limit required at \$5,000,000.00 regardless of building value.

§ 11.1.6.3 **Business** Auto Liability insurance with a minimum limit of \$1,000,000 BI-PD combined single limit. The policy must cover:

- .1 All owned vehicles.
- .2 All hired vehicles.
- .3 All non-owned vehicles.

§ 11.1.6.4 An Umbrella Policy may be used to meet minimum requirements.

§ 11.1.7 All property losses shall be made payable to and adjusted with the Owner.

§ 11.1.8 All policies of insurance or declarations of coverage amounts, and types shall be approved by the Owner prior to the inception of any work.

§ 11.1.9 Other insurance required as follows:

§ 11.1.9.1 Owner's Protective Liability Insurance shall be furnished by the Contractor and naming the Owner as the Insured.

	Projects Under \$100,000	Projects \$100,001 - \$1,000,000	Projects Over \$1,000,000
CSL – Each Occurrence	\$500,000	\$1,000,000	\$3,000,000

§ 11.1.9.2 **Asbestos Abatement Liability** (required when asbestos abatement is included in the work)

The contractor or subcontractor who will be doing the asbestos abatement as outlined in this contract shall obtain and maintain such liability coverage for the asbestos abatement hazard and exposure with minimum limits of \$1,000,000 per occurrence for the duration of the project. The policy shall name the Owner as an additional insured for the

project. The policy shall be written on an "occurrence" form without a sunset clause. Claims-made coverage is unacceptable. The insurance company shall have an A.M. Best rating of at least A-.

§ 11.1.10 If, at any time, any of the said policies shall be or become unsatisfactory to the Owner, as to form or substance, or if a company issuing any such policy shall be or become unsatisfactory to the Owner, the Contractor/Subcontractor shall promptly obtain a new policy, submit the same to the Owner for approval and submit a certificate thereof as hereinabove provided.

Upon failure of the Contractor/Subcontractor to furnish, deliver and maintain such insurance as above provided, this contract, at the election of the Owner, may be forthwith declared suspended, discontinued or terminated. Failure of the Contractor/Subcontractor to take out and/or to maintain or the taking out and/or maintenance of any required insurance, shall not relieve the Contractor/Subcontractor from any liability under the contract, nor shall the insurance requirements be construed to conflict with the obligation of the Contractor/Subcontractor concerning indemnification. The Owner reserves the right to require complete, certified copies of all required insurance policies, at any time. Should Contractor fail to obtain any insurance required under this Contract then the Owner is entitled to a reduction in the Contract sum for what insurance would reasonably have cost the Contractor.

§ 11.1.11 RISKS AND INDEMNIFICATIONS ASSUMED BY THE CONTRACTOR. Neither the acceptance of the Completed Work nor payment therefore shall release the Contractor/Subcontractor from his obligations from the insurance requirements or indemnification agreement.

§ 11.1.11.1 Additional insurance may be required on an individual basis for extra hazardous contracts and specific service agreements.

If such additional insurance is required for a specific contract, that requirement will be described in the "Special Conditions" of the contract specifications.

§ 11.1.11.2 If any of the Property and Casualty insurance requirements are not complied with at their renewal dates, payments to the Contractor/Subcontractor will be withheld until those requirements have been met, or at the option of the Owner, the Owner may pay the Renewal Premium and withhold such payments from any monies due the Contractor/Subcontractor.

§ 11.1.11.3 All property losses shall be made payable to and adjusted with the Owner.

§ 11.1.11.4 All policies and certificates of insurance shall be approved by the Owner prior to the inception of any work.

§ 11.1.11.5 If at any time any of the foregoing policies shall be or become unsatisfactory to the Owner, as to form or substance, or if a company issuing any such policy shall be or become unsatisfactory to the Owner, the Contractor/Subcontractor shall, upon notice to that effect from the Owner, promptly obtain a new policy, submit the same to the Owner for approval and submit a certificate thereof as hereinabove provided, this Contract, at the election of the Owner, may be forthwith declared suspended, discontinued or terminated. Failure of the Contractor/Subcontractor to take out and/or maintain or the taking out and/or maintenance of any required insurance, shall not relieve the Contractor/Subcontractor from any liability under the Contract, nor shall the insurance requirements be construed to conflict with or otherwise limit the obligations of the Contractor/Subcontractor concerning indemnification. The Owner reserves the right to require complete, certified copies of all required insurance policies, at any time.

§ 11.1.12 SUBCONTRACTORS

Contractor shall be responsible for insuring that subcontractors have adequate insurance to protect the Owner and Contractor from liability.

§ 11.1.13 CERTIFICATE OF INSURANCE

§ 11.1.13.1 Contractor shall furnish the Owner with certificates of insurance affecting coverage required by this clause. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates of insurance must also contain the following in the "Description of Operations" section:

§ 11.1.13.2 If the Contractor is a General Contractor, then so state.

§ 11.1.13.3 If the Contractor is a specialty contractor, then so state and provide the list of specialties for which the contractor is insured.

§ 11.1.13.4 The certificates are to be received and approved by the Owner before work commences. The Owner reserves the right to require complete, certified copies of all required insurance policies, at any time.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

(Paragraphs deleted)

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Property insurance shall be on an "all-risk" (Builder's Risk) or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss. The policy for this insurance shall be completed value. This policy shall be in force to protect the Owner, the Contractor and Subcontractors for loss. The Contractor shall be responsible for any deductible on any policy of insurance if a claim is made under the policy. The Builder's Risk Insurance shall name the Owner as insured.

(Paragraphs deleted)

§ 11.3.1.1 This property insurance shall cover portions of the Work stored off the site, and portions of the Work in transit.

§ 11.3.1.2 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract. The cost of the bond shall be included in the contract sum. The amount of each bond shall be equal to one hundred (100%) percent of the contract sum.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.4.3 The Contractor shall deliver the required bonds to the Owner not later than three (3) days following the date the Agreement is entered into; or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.

§ 11.4.4 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense, without change to the contract time

§ 12.2 Correction of Work

§ 12.2.1 Before or After Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense. If prior to the date of Substantial Completion, the Contractor, a Subcontractor or anyone for whom either is responsible uses or damages any portion of the Work, including, without limitation, mechanical, electrical, plumbing and other building systems, machinery, equipment or other mechanical device, the Contractor shall cause such item to be restored to "like new" condition at no expense to the Owner.

§ 12.2.2 After Substantial Completion

§ 12.2.2 If, within one year after the date of the recordation of the certificate of Substantial Completion or Acceptance in the mortgage records for the Parish in which the project is located, the Work or any portion thereof is found by the Architect or Owner not to be in accordance with the requirements of the Contract Documents, the Contractor shall correct such Work or if it is rejected by the Owner or Architect, remove such Work from the site and replace it with Work in accordance with the Contract Documents. If circumstances exist, including, but not limited to an emergency as deemed by the Owner, the Owner may have any such Work corrected or removed and replaced. In such event, the Contractor shall reimburse the Owner for all costs and damages, including compensation for the Architect's services and expenses made necessary thereby. This period of correction of one year shall be extended as to respective portions of the work, performed after the date of the filing of the Certificate of Substantial Completion. This obligation under this subparagraph 12.2.2 shall survive acceptance of the Work under the Contract Documents and termination of the Agreement. The Owner shall give written notice promptly after the discovery of any condition of nonconforming work. Further, this obligation is in addition to and does not limit any general warranty provided by law or specified in the Contract Documents. If the work is of such a nature that requires more than 2 hours effort by the Architect, the Contractor shall pay the Owner \$175.00 per hour for the Architect's time.

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

(Paragraph deleted)

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.1.1 The contractor and his surety yield to the rules of arbitration indicated herein (if applicable) and the jurisdiction of the Judicial District Court in which the project is located.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals unless otherwise noted in the contract documents. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included in the Contract Documents, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or

approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

(Paragraphs deleted)

§ 13.6 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

§ 13.6.1 As between the Owner and Contractor: except as provided by law:

- .1 Before Substantial Completion. As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run, and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;
- .2 Between Substantial Completion and Final Certificate for Payment. As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run, and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of issuance of the final Certificate for Payment; and
- .3 After Final Certificate for Payment. As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any Warranty provided under Section 3.5, the date of any correction of the Work or failure to correct the Work by the Contractor under Section 12.2, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

§ 13.8 WORK CONTINUATION AND PAYMENT

§ 13.8.1 Unless otherwise agreed in writing, the Contractor shall carry on the Work, maintain the Schedule of the Work pending any claim or lawsuit, and, if so, the Owner shall continue to make payments in accordance with the provisions of the Contract Documents except as to any item in dispute.

§ 13.9 ATTORNEY'S FEES

§ 13.9.1 If as a result of any action or lawsuit filed by the Contractor it is necessary for the Owner to retain an attorney, the Contractor shall pay all legal fees and costs incurred by the Owner, if the Owner is the prevailing party for all or a portion of any claim.

§ 13.9.2 In the event it is necessary for Owner to retain an attorney and/or file suit as a result of a breach by the Contractor of any of the Contractor's obligations in the Contract Documents, including, but not limited, or failing to comply with the provisions of the plans and specifications or failing to perform in a good and workmanlike manner, or failing to perform its work timely, or any other breaches of the Contractor's obligations, the Contractor will be deemed liable for any and all attorney's fees and court costs incurred by Owner.

§13.10 PROGRESS AND COORDINATION MEETINGS

§13.10.1 Pre-Construction Conference shall be held. The following shall be in attendance; Owner, Architect and consultants, Contractor and Superintendent, major subcontractors and representative of separate contractors, when applicable. The Contractor shall submit to the Architect prior to or at the Pre-Construction meeting the following: (1) List of major subcontractors and their phone numbers, (2) list of Contractor's Superintendent and Project Manager with 24 hour phone numbers, (3) tentative construction progress schedule and submittals schedule.

§13.10.2 Progress and coordination meetings will be held monthly on site or as changed in writing by the Owner. The Contractor shall distribute minutes of each meeting to all participants within seven (7) days of each meeting. The Contractor's Project Superintendent, all active Subcontractors and material suppliers shall attend the meeting.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped; or
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be

(Paragraphs deleted)
stopped.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, unanticipated repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
 - .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
 - .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;
 - .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.
 - .5 become insolvent, seeking relief in bankruptcy, is placed in bankruptcy involuntarily, or makes a general assignment for the benefit of the creditors and fails to provide adequate assurances, the adequacy of which the Owner will be the sole judge, of the Contractor's future performance in accordance with the requirements of the Contract Documents.
 - .6 disregards the authority of the Architect;
 - .7 loses charge of the property of the Contractor resulting in a trustee, receiver, custodian or agent appointed under applicable law or under contract;
 - .8 breaches any warranty made by the Contractor under or required pursuant to the Contract Documents;
 - .9 fails after commencement of the Work to proceed continuously with the construction and completion of the Work for more than ten (10) working days, except as permitted under the Contract Documents;
- or

.10 fails to complete the punch list within the lien period as provided in 9.8.1.1.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished. Termination by the Owner shall not suspend assessment of liquidated damages against the surety.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 place no further orders and enter into no further subcontracts for materials, labor, services or facilities, except as necessary to complete portions of the Contract not terminated;
- .3 terminate all subcontractors and orders to the extent they relate to the Work terminated; and
- .4 proceed to complete the performance of Work not terminated; and
- .5 take action that may be necessary or that the Owner may direct for the protection and preservation of the terminated work.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed.

§ 14.4.4 The amount to be paid to the Contractor by the Owner because of the termination shall consist of:

- .1 Work performed and for Work in process on or off the site to the extent completed on the terminated portion of the Contract before the effective date, the cost of that Work and the expense of paying the terminated purchase orders for materials that are properly chargeable to the terminated portion of the Contract.
- .2 A fair and reasonable profit on the Work completed;

- .3 No payment for profit will be paid the contractor for work not completed or for lost profits on future anticipated work.
- .4 The term "cost" as used in this Paragraph 14.4 shall be listed in Subparagraph 7.3.6.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than five years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by written notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.6.3 No Claim for additional time made for whatever cause will be approved unless and until the Contractor demonstrates to the satisfaction of the Owner that the Completion Time for the Work has itself been adversely affected

by the actions, events, or circumstances cited in the claim. The mere fact that some portion of the Work may be affected is not sufficient to establish an entitlement to an extension to the contract Time. The baseline against which any such Claim for additional time will be judged will be the Approved Project Schedule, updated and revised as required by the Contract Documents.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3 and 10.4., shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within fourteen (14) calendar days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner or the Contractor or both to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten calendar days after issuance of the request, and shall either (1) provide a response on the requested supporting data or (2) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution. If the party making the claim does not respond in writing indicating disagreement with the decision and offering the reasons why they object, along with supporting documentation, within thirty (30) days of the date of the initial decision, the initial decision of the initial decision maker shall be deemed binding by all parties and both parties waive their rights to mediate or pursue binding dispute resolution proceedings.

with respect to the initial decision. The date of the initial decision shall be the date of the written response of the initial decision maker.

§ 15.2.6 Either party may file for mediation of an initial decision at any time after the decision by the initial decision maker has been made, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within fourteen (14) calendar days from the date of receipt of an initial decision, demand in writing that the other party agree to mediation. If such a demand is made and the party receiving the demand fails to agree to mediation within fourteen (14) calendar days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the final decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation.. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Project information.
 - 2. Work covered by Contract Documents.
 - 3. Phased construction.
 - 4. Work by Owner.
 - 5. Work under separate contracts.
 - 6. Future work.
 - 7. Purchase contracts.
 - 8. Owner-furnished products.
 - 9. Contractor-furnished, Owner-installed products.
 - 10. Access to site.
 - 11. Coordination with occupants.
 - 12. Work restrictions.
 - 13. Specification and Drawing conventions.
 - 14. Miscellaneous provisions.
- B. Related Requirements:
 - 1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

- A. Project Identification: Tennis Court Conversion to Beach Volleyball – East Campus.
 - 1. Project Location: University of New Orleans, East Campus, 6801 Franklin Ave., New Orleans, LA 70122
- B. Owner: University of New Orleans
 - 1. Owner's Representative: Ms. Melanie Champagne; Director, Construction and Design: UNO Facility Services; Administration Bldg, Room 112; 2000 Lakeshore Drive, New Orleans, LA 70148; 504 280-3237; mmchamp2@uno.edu
- C. Architect: Holly & Smith Architects, APAC
 - 1. Architect's Representative: Mr. Rohit Sood; Holly & Smith Architects; 2302 Magazine Street, New Orleans, LA 70130. 504 584-1315; rohit@hollyandsmith.com

- D. Other Owner Consultants: Owner has retained the following design professionals who have prepared designated portions of the Contract Documents:
 - 1. No other consultants involved.
- E. Web-Based Project Software: Project software administered by the Architect will be used for purposes of managing communication and documents during the construction stage.
 - 1. See Section 013100 "Project Management and Coordination." for requirements for utilizing the using web-based Project software.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
 - 1. Conversion of existing tennis courts to NCAA compliant sand volleyball courts.
- B. Type of Contract:
 - 1. Project will be constructed under a single prime contract.

1.5 PHASED CONSTRUCTION

- A. The Work shall be conducted in a single phase.

1.6 WORK BY OWNER

- A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

1.7 WORK UNDER SEPARATE CONTRACTS

- A. There is no work under separate contract on this project.

1.8 FUTURE WORK

- A. There is no Future Work by the Owner involved in this project.

1.9 PURCHASE CONTRACTS

- A. The Owner has no Purchase contracts with suppliers of material and equipment to be incorporated into the Work of this project.

1.10 OWNER-FURNISHED PRODUCTS

- A. Owner will furnish sand and contractor will install sand per base bid. See section 012300 – Alternates for alternate scope pertaining to sand.

1.11 CONTRACTOR-FURNISHED, OWNER-INSTALLED PRODUCTS

- A. There are no Contractor-Furnished, Owner-Installed products on this project.

1.12 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings, by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated. The building and surrounding area will remain in use during construction.
1. Limits: Confine construction operations within temporary construction fencing as well as staging and parking areas identified by the owner.
 2. Driveways, Walkways and Entrances: Keep driveways, walkways, stairs and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage, to match conditions prior to construction, caused by construction operations.
- D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage, to match conditions prior to construction, caused by construction operations.

1.13 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and adjacent building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 2. Notify Owner not less than 3 working days in advance of activities that will affect Owner's operations.

1.14 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

- B. On-Site Work Hours: Limit work on site to normal business working hours of seven o'clock a.m. to seven o'clock p.m., Monday through Friday, unless otherwise indicated. Weekend work must be coordinated and approved by owner.
 - 1. Early Morning Hours: Early morning hours will not be allowed.
 - 2. Hours for Utility Shutdowns: If required, GC shall coordinate with Owner and User Agencies through the owner.
- C. Existing Utility Interruptions: Do not interrupt utilities serving, or located on the facilities (including but not limited to electrical, gas and cellular service antenna arrays) occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner and Architect not less than two working days in advance of proposed utility interruptions.
 - 2. Obtain Owner's written permission before proceeding with utility interruptions.
 - 3. Interruptions that affect User Agencies shall be coordinated through the Owner.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to occupants or roof mounted equipment with Owner.
 - 1. Notify Owner and Architect not less than three working days in advance of proposed disruptive operations.
 - 2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Nonsmoking Building: Smoking is not permitted on campus.
- F. Restricted Substances: Use of tobacco products and other controlled substances on Project site is not permitted.
- G. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.
- H. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.
 - 1. Maintain list of approved screened personnel with Owner's representative.

1.15 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor.
 - 2. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

3. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard, scheduled on Drawings and per typical convention.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

1.16 MISCELLANEOUS PROVISIONS

- A. Construction Parameters: Refer to drawings and specifications for the required construction parameters. The approach to how the work is executed, if outlined in these contract documents are diagrammatic representations of the approach to construction derived from the Owner's strategy for maintaining operations while the scope of the Work is under construction. Areas indicated as limits of the Work are the approximate location of the boundaries and are not to be construed as an absolute limit of work scope. General Contractor shall acknowledge Owner requirements, field conditions, and project scheduling may alter this preliminary construction information by the time of actual performance, therefore any reliance by the General Contractor on these preliminary construction parameters are at the General Contractors own risk. Therefore, the General Contractor shall waive all claims related to delay, acceleration and/or inefficiency related to any subsequent modification of this preliminary construction parameters information.
- B. Meetings to Discuss Approach: Meet with Owner and Architect far enough in advance to coordinate takeover and initiating each construction component / Approach. Failure to coordinate and document such a meeting will result in potential delays not the fault of the Owner or Architect or any of their consultants.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Add Alternate No. 1:

1. Base Bid: Owner shall provide all sand required for volleyball courts. General Contractor include all labor, materials, and incidentals required to install sand.
2. Alternate: Provide all labor, material, equipment, and incidentals as required to do the following: General Contractor shall provide and install all sand required for volleyball courts. See Spec Section 321315 Granular Material for sand requirements.

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on Architect's Supplemental Instruction (ASI) form included in Project Manual.

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request, or 14 days when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use Change Proposal Quotation form included in Project Manual.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Include costs of labor and supervision directly attributable to the change.
 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
 7. Proposal Request Form: Use Change Proposal Quotation form included in Project Manual.
- C. Tracking of Change Proposal Requests: The Architect shall maintain the official Change Proposal Request (CPR) Log. The General Contractor is allowed to monitor and maintain their own system; however, the official contract system shall be maintained by the Architect.
1. Contractor-Initiated Proposals: Assignment of a Contractor-Initiated Proposal as a Change Proposal Request shall be by the Architect, after evaluation and upon determination that the claim is valid.
- D. Change Proposal Quotations shall include only the values of labor and materials that are directly affected by the requested change. It shall not include the cost of labor and materials that are on-going during the course of the work for subcontractors, suppliers, and the General Contractor. In addition, the requirements set forth in other sections of the contract documents and not allowing the cost of off-site subcontractors, suppliers and General Contractor's expenses shall apply. The Contractor shall adhere to the following when executing a Change Proposal Quotation:
1. If the work is concurrent with the ongoing construction of the project, and the work is, in the opinion of the architect, concurrent with the ongoing work in process, supervision and support personnel, including the Project Superintendent and all personnel on site shall not be included in the cost of the change.
 2. If extensions of time are requested in the change and the work is, in the opinion of the architect, concurrent with the ongoing work in process, extensions of time will not be granted.
 3. If extensions of time are requested because additional manpower is needed to execute the work and the work is, in the opinion of the architect, concurrent with the ongoing work in process, the lack of manpower will not be acceptable as a basis for an extension of time.
 4. In all cases, the request for any supervision expenses can only be considered when an extension of time is granted that extends work beyond the substantial completion date set at the time the request is submitted and if the work is, in the opinion of the architect, non-concurrent with the ongoing work in process.

1.5 CONTRACTOR'S RESPONSE TO PROPOSAL REQUEST

- A. The Contractor is obligated to respond to the time frames as noted on the issued Change Proposal Request Form or advise the Architect in writing of the date on which the proposal submission will be submitted. Failure to do so obligates the Contractor to respond within the time frame indicated on the Change Proposal Request Form. Should the timeframe for receipt of the change proposal quotation exceed that indicated on the Change Proposal Request form:
1. The Contractor shall not have grounds for a claim for a request for an extension of time.
 2. The Contractor shall not have grounds for a claim for additional cost due to delay of the project.
 3. The Contractor shall not have grounds for a claim for additional cost or extension of time for the development of conditions manifesting as a result of failure of the Contractor to meet the timeframes stipulated.
- B. The Contractor is obligated to respond to the change request in sufficient itemized form to be properly evaluated by the Architect and the Owner. At a minimum the following shall be included in the breakdown using the forms required by the owner or as indicated within these specifications:
1. Itemized labor with unit cost for each category of labor used.
 2. Wages shall itemize direct cost and delineate a labor burden markup for applicable payroll taxes, worker compensation insurance, unemployment compensation, and social security taxes. As a means to be specific the following is to be included in the Labor Burden calculations:
 - a. FICA
 - b. Medicaid
 - c. Employer FICA and Medicaid Match
 - d. Worker's Compensation
 - e. FUTA
 - f. SUTA
 - g. All other components of labor burden not listed above are considered overhead and shall be included in overhead and profit multiplier that is allowed as per the General Conditions of the Contract for Construction. No other markups for labor burden will be considered.
 3. Cost of materials, and supplies including the identification of each item and its cost.
 4. Identify each piece of machinery and equipment and its individual cost. Only include the cost of the machinery for the time period in which it is being actively used.
 5. Cost for estimating the change, schedule revisions, and management efforts associated with implementation of the change into the project shall not be included as line items, as they are tasks considered overhead in this contract.
- C. Failure of the Contractor to provide information to properly evaluate the cost associated with the proposed change shall result in the following:
1. The Contractor shall not have grounds for a claim for a request for an extension of time.
 2. The Contractor shall not have grounds for a claim for additional cost due to delay of the project.
 3. The Contractor shall not have grounds for a claim for additional cost or extension of time for the development of conditions manifesting as a result of failure of the Contractor to meet the timeframes stipulated.

1.6 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Change Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract. At a minimum, the Contractor shall meet the requirements noted in Paragraph 1.5B of this section plus all itemized timesheets for labor and receipts for material.
 - 2. Owner reserves the right to monitor all construction change directives by whatever means necessary to document the work taking place. The Contractor and all subcontractors, sub-subcontractors and suppliers shall fully cooperate with the owner and the owner's assigned representatives in these endeavors.

1.8 CONTRACTOR'S REQUEST FOR INFORMATION (RFI)

- A. Refer to Division 01 Section "Project Management and Coordination" for RFI requirements.
- B. If the Contractor believes an RFI response warrants change in the Contract Time or the Contract Sum, he shall notify Architect in writing within ten (10) calendar days of receipt of the RFI response. Assignment of an RFI as a Change Proposal Quotation shall be done by the Architect, after evaluation and upon determination that the Contractor's claim is valid.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 2. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with the following:
 - a. Items required to be indicated as separate activities in Contractor's construction schedule.
 - b. Submittal Schedule
 - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven (7) calendar days after the Pre-Construction Conference.
 - 3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.
 - 4. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide subschedules showing values coordinated with each element.

5. Subschedules for Separate Design Contracts: Where the Owner has retained design professionals under separate contracts who will each provide certification of payment requests, provide subschedules showing values coordinated with the scope of each design services contract, as described in Section 011000 "Summary."
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate breakdown with the Project Manual Table of Contents. Provide multiple line items for principal subcontract amounts in excess of five (5) percent of the Contract Sum. Break out all values as follows:
 - a. Delivered cost of product with taxes paid (material).
 - b. Total installation cost with overhead and profit (labor).
 - c. Round amounts to nearest whole dollar
 3. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 4. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
 5. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate Owner payments or deposits, if any, and balance to be paid by Contractor.
 6. Overhead Costs: Include total cost and proportionate share of general overhead and profit for each line item.
 7. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five (5) percent of the Contract Sum and subcontract amount.
 8. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

1. The Owner reserves the right to request additional cost information breakdowns in any format necessary as may be required for their needs in getting the project completed. This request shall be submitted to the Architect for processing to the Contractor. The Contractor shall submit the requested information to the Owner, through the Architect, within fourteen days of the request by the Architect.
 2. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Times: Submit Application for Payment to Architect by the <Insert day> of the month. The period covered by each Application for Payment is one month, ending on the [last day of the month] <Insert specific day of the month>.
1. Submit draft copy of Application for Payment seven (7) days prior to due date for review by Architect.
- D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect] will return incomplete applications without action.
1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders issued before last day of construction period covered by application.
 4. Submit a draft application to the architect for review prior to submitting the actual monthly application. Submit in sufficient time to allow field review by the architect and the architect's consultants. Time draft submission to coincide with scheduled monthly Owner meeting at the site.
- F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. The contractor shall not apply for any stored materials not delivered to the site.
1. If required by the Owner, provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials. The attached supporting documentation shall include the following:
 - a. Quantity of each different material included in application.
 - b. Unit price of each different material in application.
 - c. Extended cost of each different material in application.
 - d. Signature of authorized party representing the supplier.
 3. Provide summary documentation for stored materials indicating the following:

- a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
4. Do not apply for stored materials that are out of sequence with construction operations. The Architect's decision on this matter is final.
5. Failure to follow the information contained herein shall result in immediate rejection of the whole Application for Payment.
- G. Transmittal: Submit one (1) signed and notarized electronic copy of each Application for Payment to Architect via the designated web-based program. Include waivers of lien and similar attachments.
 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- I. Initial Application for Payment: Administrative actions and submittals that must precede the submittal of first Application for Payment include the following:
 1. List of subcontractors.
 2. Approved Schedule of Values.
 3. Approved Contractor's construction schedule.
 4. Submittal schedule (preliminary if not final).
 5. List of Contractor's staff assignments.
 6. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 7. Certificates of insurance and insurance policies.
 8. Performance and payment bonds.
 9. Data needed to acquire Owner's insurance.
- J. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

- K. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G707, "Consent of Surety to Final Payment."
 5. Evidence that claims have been settled.
 6. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION **012900**

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General coordination procedures.
2. Coordination drawings.
3. Requests for Information (RFIs).
4. Administrative and supervisory personnel.
5. Digital project management procedures.
6. Project meetings.
7. Official Project Communications

- B. Related Requirements:

1. Section 011000 "Summary of Work" for coordination and scheduling of equipment and movables by the Owner.
2. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
3. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
4. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. BIM: Building Information Modeling.
- B. RFI: Request for Information. Request from Owner, Construction Manager, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.
- C. Letter: A written, typed, or printed communication, especially one sent in an envelope by mail or courier.
- D. Email: Messages distributed by electronic means from one computer user to one or more recipients via a network.
- E. Text Message: An electronic communication sent and received by mobile phone.
- F. Verbal Communication: The sharing of information between individuals by using speech.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
 2. Number and title of related Specification Section(s) covered by subcontract.
 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within ten (10) days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
1. Post copies of list in project meeting room, in temporary field office, [in web-based Project software directory,]and in prominent location in [each]built facility. Keep list current at all times.
 2. Changing of assigned personnel reviewed and approved by the Owner can only be done with written approval by Owner.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Coordination: Each contractor shall cooperate with Project coordinator who shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its own operations with operations included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities[and scheduled activities of other contractors] to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 2. Coordinate the addition of trade-specific information to coordination drawings [by multiple contractors]in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - c. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - d. Indicate required installation sequences.
 - e. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
 - f. Indicate relationship of components shown on separate submittals and shop drawings.
 3. Sheet Size: At least 8½ by 11 inches but no larger than 24 by 36 inches.

- B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Roof Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Supplement plan drawings with section drawings where required to adequately represent the Work.
 2. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
 3. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, and similar items.
 4. Mechanical and Plumbing Work: Show the following items that are located above the roof deck:
 - a. Sizes and bottom elevations of fans, motors, chimneys, ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire-rated enclosures around ductwork.
 5. Electrical and Telecommunications Work: Show the following items that are located above the roof deck:
 - a. Runs of vertical and horizontal conduit.
 - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
 - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor-control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
 6. Fire-Protection System: Show the following items that are located above the roof deck:
 - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
 7. Lightning Protection System: Show the following items that are located above the roof deck:
 - a. Locations of lightning rods / air terminals and bases and all roof or wall penetrations
 8. Review: Architect will review coordination drawings to confirm that in general the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make suitable modifications and resubmit.
 9. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 013300 "Submittal Procedures."
- C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
 2. File Submittal Format: Submit or post coordination drawing files using PDF format.

3. Architect will furnish Contractor, at Architect's discretion, digital data files of Drawings for use in preparing coordination digital data files.
 - a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
 - b. Digital Data Software Program: Drawings are available in Autodesk AutoCAD version 2021.
 - c. Contractor shall execute a data licensing agreement in the form of Agreement included in this Project Manual.

1.7 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 1. Project name.
 2. Architect's and Owner's Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect.
 1. Attachments shall be electronic files in PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. For standard or simple issues, allow seven (7) working days for Architect's response for each RFI. For more complicated issues as determined by the Architect, the Architect shall submit a schedule indicating when the Architect expects to take action. RFIs received by Architect after 1:00 p.m. will be considered as received the following business day.

1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within ten (10) days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly. Use software log that is part of web-based Project software. Log shall contain not less than the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Change Proposal Request, as appropriate.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven (7) days if Contractor disagrees with response.

1.8 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendant, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of operations with other contractors.
- B. Project Superintendent: General Contractor shall provide a full time on-site staff member to perform the duties of Project Superintendent for the duration of this project.
1. General Contractor shall designate a Project Superintendent for this project in the post-bid information prior to contract award. General Contractor shall, in designating the name of this Project Superintendent, warrant and represent that such Project Superintendent has completed two (2) projects of similar size and complexity in the capacity of Project Superintendent during the past 7 years.

2. Submit a resume as a component of post-bid information.
- C. Project Manager: General Contractor shall provide a full time staff member to perform the duties of Project Manager for the duration of this project.
1. General Contractor shall designate the Project Manager in the post-bid information prior to contract award. General Contractor shall, in designating the name of this Project Manager, warrant and represent that such Project Manager has a minimum of 2 years of construction experience and has completed a minimum of 2 projects of at least similar size and complexity in the capacity of Project Manager in the last 7 years.
 2. The Project Manager shall obtain, process and if necessary, execute all coordination drawings required to execute the work. This shall include all aspects of the effort so that the Project Manager is fully aware and as a result responsible for the development and proper working order of systems within this coordination effort. Failure to execute this work or to properly execute this work shall result in the general contractor being fully responsible for all modifications, repairs or other necessary work in order for provide systems that meet the specified performance requirements and to allow ease of maintenance and repair
 3. Submit a resume as a component of post-bid information

1.9 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect, at the Architect's discretion, for Contractor's use during construction.
1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
 2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
 3. Digital Drawing Software Program: Contract Drawings are available in Autodesk AutoCAD 2021.
 4. Contractor shall execute a data licensing agreement in the form of Agreement included in Project Manual.
 - a. Subcontractors, and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of Agreement included in this Project Manual.
- B. Web-Based Project Software: Use Architect's web-based Project software site for purposes of hosting and managing Project communication and documentation until Final Completion.
- C. Web-Based Project Software: The General Contractor shall be required to access and use the Architect's web-based Project software site (Project Website) for communication during construction for the activities noted below, and can be accessed at <https://projects.hollyandsmith.com/UserWeb/>. The Architect's Project Website shall host the information that the Architect is using for tracking the work of the contract. This information is available until final acceptance of the project to which access by the General Contractor will be provided for all information indicated below for construction communications.
1. The Project Website includes the following project activities that require interface by the General Contractor:
 - a. RFI forms and logs of the Architect.
 - b. Submission of RFI's.

- c. Submittal forms and logs of the Architect.
 - d. Process and tracking of submittals.
 - e. Reminder and tracking functions issued by the Architect.
 - f. Field review minutes of the Architect (Compliance Review).
 2. The General Contractor shall become familiar with the operations of the Project Website and shall have the responsibility for continuous use of the website for the benefit of the project. This effort shall include, but is not limited to, the following:
 - a. Confirm that access has been granted for each of the functions itemized above for all assigned parties.
 - b. Become fluent with the operation of the website at a level that will allow ease of access and regular use.
 - c. Schooling all parties assigned to this project within the General Contractor's staff for access and use.
 3. The Project Website is not intended to replace any General Contractor based project management software but is an enhancement to be used by the General Contractor for accessing information normally requested of the Architect in preparation for meetings, or general project management activities of the General Contractor.
 4. The General Contractor shall use the information contained within the Project Website to update their project information in preparation for meetings, communications with the subcontractors, or other project management related activities
- D. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.10 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of 10 working days prior to meeting.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three (3) days of the meeting.
- B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Owner's Associated Parties (Telecommunication Lessees), Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Responsibilities and personnel assignments.
 - b. Tentative construction schedule.
 - c. Phasing.
 - d. Critical work sequencing and long lead items.
 - e. Designation of key personnel and their duties.
 - f. Lines of communications.
 - g. Use of web-based Project software.
 - h. Procedures for processing field decisions and Change Orders.
 - i. Procedures for RFIs.
 - j. Procedures for testing and inspecting.
 - k. Procedures for processing Applications for Payment.
 - l. Distribution of the Contract Documents.
 - m. Submittal procedures.
 - n. Preparation of Record Documents.
 - o. Use of the premises and existing building.
 - p. Work restrictions.
 - q. Working hours.
 - r. Owner's occupancy requirements.
 - s. Responsibility for temporary facilities and controls.
 - t. Procedures for moisture and mold control.
 - u. Procedures for disruptions and shutdowns.
 - v. Construction waste management and recycling.
 - w. Parking availability.
 - x. Office, work, and storage areas.
 - y. Equipment deliveries and priorities.
 - z. First aid.
 - aa. Security.
 - bb. Progress cleaning.
 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Owner of scheduled meeting dates.
 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.

- g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility requirements.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written instructions.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
 - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 - 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 30 days prior to the scheduled date of Substantial Completion.
- 1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 - 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of Record Documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Procedures for completing and archiving web-based Project software site data files.
 - d. Submittal of written warranties.
 - e. Requirements for completing sustainable design documentation.
 - f. Requirements for preparing operations and maintenance data.
 - g. Requirements for delivery of material samples, attic stock, and spare parts.
 - h. Requirements for demonstration and training.
 - i. Preparation of Contractor's punch list.
 - j. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - k. Submittal procedures.
 - l. Coordination of separate contracts.

- m. Owner's partial occupancy requirements.
 - n. Responsibility for removing temporary facilities and controls.
- 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Conduct progress meetings at bi-weekly (every two weeks) intervals.
 - 1. Coordinate dates of meetings with preparation of payment requests.
 - 2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities within the next 30 Days shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site use.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of Proposal Requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
 - 4. Minutes: Record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.11 OFFICIAL PROJECT COMMUNICATIONS

- A. General: Use of letters and emails are recognized as official project communication mediums for this project.
 - 1. Under no circumstances will text messages or verbal communication be considered official project communications. Should text messages or verbal communication be used, follow up with official project communications is necessary for the information to be recognized.
 - 2. The transmittal of all procedural documents (e.g. schedules, submittals, applications for payment, RFIs, ARFIs, etc.) shall be done through official communications mediums only.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Startup construction schedule.
 - 2. Contractor's Construction Schedule.
 - 3. Construction schedule updating reports.
 - 4. Daily construction reports.
 - 5. Material location reports.
 - 6. Site condition reports.
 - 7. Unusual event reports.
- B. Related Requirements:
 - 1. Section 011200 "Multiple Contract Summary" for preparing a combined Contractor's Construction Schedule.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. Baseline Schedule: The Contractor's initial CPM Progress Schedule presenting an orderly and realistic plan for completion of the entire Work of the Project. When accepted by the Owner, the Baseline Schedule becomes the initial version of the Official Progress Schedule. The Baseline Schedule is prepared in chart or graph format, consistent in all respects with the Contract Time(s) and order of Work, presented in sufficient detail to show the chronological relationship of all activities of the Project including but not limited to planned starting and completion dates of various activities, submittal of Shop Drawings and Product Data, procurement of materials and equipment, and deliveries of materials and equipment
- C. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Architect.

- D. CPM Progress Schedule: The Contractor's Progress Schedule prepared in CPM Precedence format using the scheduling software required.
- E. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- F. Critical Path: The set or sequence of predecessor/successor activities which will take the longest time to complete. The duration of the critical path is the sum of the activities' durations along the path. Thus, the critical path can be defined as the longest possible path through the network of project activities. The duration of the critical path represents the minimum time required to complete a project and contains no float.
- G. Event: The starting or ending point of an activity.
- H. Float: The number of work/calendar days an activity can be delayed without impacting the project completion date.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date. The Project "owns" float.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- I. Resource Loading: The allocation of manpower and equipment necessary for completing an activity as scheduled.
- J. Official Progress Schedule: The Contractor's Progress Schedule and all revisions and updates thereto, accepted by the Owner, in accordance with the requirements of the Contract Documents.
- K. Revised Official Progress Schedule: A proposed Schedule submitted with the Contractor's written request to revise the current version of the Official Progress Schedule. If the Owner accepts the Contractor's request to revise the Official Progress Schedule, it becomes the new current version of the Official Progress Schedule.
- L. Short Interval Schedule: The Contractor's four-week schedule, updated weekly, showing the past week, the week submitted, and two weeks thereafter. The Short Interval Schedule must correlate with the current version of the Official Progress Schedule and reference the appropriate activity numbers. The Short Interval Schedule must indicate the actual start and finish dates of all activities on the Official Progress Schedule that are started or finished during the time period encompassed by the Short Interval Schedule
- M. Updated Official Progress Schedule: The current version of the Official Progress Schedule updated monthly to include the actual start and finish dates of activities and the percentage of completion of each activity. Actual start and finish dates must be identical to the actual start and finish dates indicated on the Contractor's Short Interval Schedule submissions.
- N. Recovery Schedule: Contractor's detailed schedule indicating how Contractor intends to recover lost time.

- O. Network Window: Also known as "fragnets" or "hammocks", Network Windows must be provided as needed to 'explode' a section of the Official Progress Schedule to show the effects of proposed changes or delays to the schedule

1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
 - 1. Working electronic copy of schedule file.
 - 2. PDF file.
 - 3. Two paper copies, of sufficient size to display entire period or schedule, as required.
- B. Startup construction schedule.
 - 1. Submittal of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.
- D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 - 1. Submit a working digital copy of schedule using software indicated and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
 - 2. All CPM schedules must be provided using the Precedence Diagramming Method (PDM).
- E. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 - 1. Activity Report: List of activities sorted by activity number and then early start date, or actual start date if known.
 - 2. Logic Report: List of preceding and succeeding activities for each activity, sorted in ascending order by activity number and then by early start date, or actual start date if known.
 - 3. Total Float Report: List of activities sorted in ascending order of total float.
 - 4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.
- F. Construction Schedule Updating Reports: Submit with Applications for Payment.
- G. Daily Construction Reports: Submit at monthly intervals.
- H. Site Condition Reports: Submit at time of discovery of differing conditions.
- I. Unusual Event Reports: Submit at time of unusual event.

1.5 QUALITY ASSURANCE

- A. Scheduling Professional Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's request.
- B. Prescheduling Conference: Within seven (7) Days of the official Contract start date stated in the Notice to Proceed, conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination."
 - 1. Meeting attendees shall include the following:
 - a. Owner or Owner's designated representative.
 - b. Contractor's Authorized Representative
 - c. Contractor's Scheduler.
 - d. Contractor's Quality Control Manager.
 - e. Representatives from major Subcontractors and Suppliers.
 - f. Any other personnel deemed advisable to attend by Owner or Contractor.
 - 2. Review methods and procedures related to the preliminary construction schedule and Contractor's Construction Schedule, including, but not limited to, the following:
 - a. Review qualifications of Contractor's scheduler.
 - b. Review software limitations and content and format for reports.
 - c. Verify availability of qualified personnel needed to develop and update schedule.
 - d. Review schedule submittal requirements and procedures.
 - 1) Schedule updates
 - 2) Schedule revisions
 - 3) Recovery Schedules
 - e. Discuss level of involvement of Subcontractors in the schedule development effort.
 - f. Discuss constraints, including holidays, Hours of Work, work stages.
 - g. Review time required for review of submittals and resubmittals.
 - h. Review requirements for tests and inspections by independent testing and inspecting agencies.
 - i. Review time required for Project closeout and Owner startup procedures.
 - j. Review and finalize list of construction activities to be included in schedule.
 - k. Review procedures for updating schedule.

1.6 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from entities involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.7 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.
- B. Personnel preparing CPM Progress Schedules must be qualified and experienced in using Primavera Project Planner software to prepare Critical Path Method ("CPM") schedules and must be capable of producing the schedules and reports required by this Section. Within seven (7) Days after the official Contract start date stated in the Notice to Proceed Contractor must submit for Owner acceptance, four (4) copies of the qualifications of Contractor's proposed scheduler including references from the owner on the last three (3) recent projects where the proposed scheduler prepared the required project schedules.
 - 1. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.
- C. Time Frame: Extend schedule from date established for the Notice to Proceed to date of final completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
 - 2. The Project Time for completion of the entire Project, including Milestone activities, shall adhere to the start and finish times stated in the Contract Documents, unless Contractor formally requests and the Owner approves in writing earlier (advanced) time(s) of completion. Approval of such request shall be at Owner's discretion and shall be in the form of a Change Order.
- D. Activities: Comply with the following:
 - 1. Activity Duration: Define activities so no activity is longer than 15 days, unless specifically allowed by Architect.
 - 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 - 3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
 - 4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
 - 5. Commissioning Time: Include no fewer than 15 days for commissioning.
 - 6. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
 - 7. Punch List and Final Completion: Include not more than 45 days for completion of punch list items and final completion.
 - 8. Contingency activities are not allowed and shall not be included.
- E. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
 - 1. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.

- d. Use-of-premises restrictions.
 - e. Seasonal variations.
 - f. Environmental control.
- 2. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Subcontract awards.
 - b. Submittals.
 - c. Purchases.
 - d. Mockups.
 - e. Fabrication.
 - f. Sample testing.
 - g. Deliveries.
 - h. Installation.
 - i. Tests and inspections.
 - j. Adjusting.
 - k. Curing.
 - l. Startup and placement into final use and operation.
 - m. Commissioning.
- 3. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. Temporary enclosure.
 - b. Permanent space enclosure.
 - c. Completion of mechanical work.
 - d. Completion of electrical work.
 - e. Substantial Completion.
- F. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
- G. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.
 - 1. See Section 012900 "Payment Procedures" for cost reporting and payment procedures.
- H. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
 - 1. Unresolved issues.
 - 2. Unanswered Requests for Information.
 - 3. Rejected or unreturned submittals.
 - 4. Notations on returned submittals.
 - 5. Pending modifications affecting the Work and the Contract Time.
- I. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- J. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.
- K. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.
- L. Failure of the Official Progress Schedule to include an element of the Work required for performance of this Contract, or an inaccuracy in Official Progress Schedule, shall not relieve the Contractor from responsibility for accomplishing all activities required to complete the Work of this Project and shall not constitute grounds for a claim for delay in the execution of the Work.
- M. Failure of Contractor to substantially comply with requirements of this Section 013200 shall constitute a failure by Contractor to prosecute Work with such diligence as will ensure its completion within the Contract Time and may be considered grounds for termination or other remedy by Owner pursuant to terms of this Contract.

1.8 STARTUP CONSTRUCTION SCHEDULE

- A. Gantt-Chart Schedule: Submit startup, horizontal, Gantt-chart-type construction schedule within seven days of date established for the Notice to Proceed.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

1.9 GANTT-CHART SCHEDULE REQUIREMENTS

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 7 days of date established for commencement of the Work.
1. Base schedule on the startup construction schedule and additional information received since the start of Project.

- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

1.10 CPM SCHEDULE REQUIREMENTS

- A. General: Prepare network diagrams using AON (activity-on-node) format.
- B. CPM Schedule: Prepare Contractor's Construction Schedule using a cost- and resource-loaded, time-scaled CPM network analysis diagram for the Work.
1. Develop network diagram in sufficient time to submit CPM schedule at the pre-construction conference.
 - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates.
 2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 3. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule to coordinate with the Contract Time.
- C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Mobilization and demobilization.
 - c. Purchase of materials.
 - d. Delivery.
 - e. Fabrication.
 - f. Utility interruptions.
 - g. Installation.
 - h. Work by Owner that may affect or be affected by Contractor's activities.
 - i. Testing and inspection.
 - j. Commissioning.
 - k. Punch list and final completion.
 - l. Activities occurring following final completion.
 2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
 4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.

- D. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall Project schedule.
- E. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:
 - 1. Contractor or subcontractor and the Work or activity.
 - 2. Description of activity.
 - 3. Main events of activity.
 - 4. Immediate preceding and succeeding activities.
 - 5. Early and late start dates.
 - 6. Early and late finish dates.
 - 7. Activity duration in workdays.
 - 8. Total float or slack time.
 - 9. Average size of workforce.
 - 10. Dollar value of activity (coordinated with the schedule of values).
- F. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
 - 1. Identification of activities that have changed.
 - 2. Changes in early and late start dates.
 - 3. Changes in early and late finish dates.
 - 4. Changes in activity durations in workdays.
 - 5. Changes in the critical path.
 - 6. Changes in total float or slack time.
 - 7. Changes in the Contract Time.
- G. Value Summaries: Prepare two cumulative value lists, sorted by finish dates.
 - 1. In first list, tabulate activity number, early finish date, dollar value, and cumulative dollar value.
 - 2. In second list, tabulate activity number, late finish date, dollar value, and cumulative dollar value.
 - 3. In subsequent issues of both lists, substitute actual finish dates for activities completed as of list date.
 - 4. Prepare list for ease of comparison with payment requests; coordinate timing with progress meetings.
 - a. In both value summary lists, tabulate "actual percent complete" and "cumulative value completed" with total at bottom.
 - b. Submit value summary printouts [one week] <Insert time> before each regularly scheduled progress meeting.

1.11 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 - 1. List of subcontractors at Project site.
 - 2. List of separate contractors at Project site.
 - 3. Approximate count of personnel at Project site.

4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 7. Testing and inspection.
 8. Accidents.
 9. Meetings and significant decisions.
 10. Unusual events.
 11. Stoppages, delays, shortages, and losses.
 12. Meter readings and similar recordings.
 13. Emergency procedures.
 14. Orders and requests of authorities having jurisdiction.
 15. Change Orders received and implemented.
 16. Construction Change Directives received and implemented.
 17. Services connected and disconnected.
 18. Equipment or system tests and startups.
 19. Partial completions and occupancies.
 20. Substantial Completions authorized.
- B. Material Location Reports: At intervals of every two weeks, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:
1. Material stored prior to previous report and remaining in storage.
 2. Material stored prior to previous report and since removed from storage and installed.
 3. Material stored following previous report and remaining in storage.
- C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- D. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.
1. Submit unusual event reports directly to Owner within two (2) day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION **013200**

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
 - 3. Final Completion construction photographs.
 - 4. Preconstruction video recordings.
- B. Related Requirements:
 - 1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.
 - 2. Section 024119 "Selective Demolition" for photographic documentation before selective demolition operations commence.

1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph and video recording. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within seven (7) days of taking photographs.
 - 1. Submit photos by uploading to web-based project software site. Include copy of key plan indicating each photograph's location and direction.
 - 2. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name of Contractor.
 - c. Date photograph was taken.
 - d. Description of location, vantage point, and direction.
 - e. Unique sequential identifier keyed to accompanying key plan.
- C. Video Recordings: Submit video recordings within seven (7) days of recording.
 - 1. Submit video recordings on thumb drive or by uploading to web-based project software site. Include copy of key plan indicating each video's location and direction.
 - 2. Identification: With each submittal, provide the following information on web-based project software site:

- a. Name of Project.
- b. Name of Contractor.
- c. Date video recording was recorded.
- d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.4 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

1.5 FORMATS AND MEDIA

- A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels. Use flash in low light levels or backlit conditions.
- B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full high-definition mode with vibration-reduction technology. Provide supplemental lighting in low light levels or backlit conditions.
- C. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
- D. Metadata: Record accurate date and time from camera.
- E. File Names: Name media files with date, Project area and sequential numbering suffix.

1.6 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs with maximum depth of field and in focus.
 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Preconstruction Photographs: Before commencement of demolition, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
 1. Flag construction limits before taking construction photographs.
 2. Take minimum of 20 photographs to show existing conditions adjacent to property before starting the Work.
 3. Take minimum of 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- C. Periodic Construction Photographs: Take minimum 20 photographs monthly coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

- D. Time-Lapse Sequence Construction Photographs: Take 8 photographs as indicated, to show status of construction and progress since last photographs were taken.
1. Frequency: Take photographs weekly, on the same day each week.
 2. Vantage Points: Following suggestions by Architect and Contractor, photographer to select vantage points. During each of the following construction phases, take not less than six of the required shots from same vantage point each time to create a time-lapse sequence as follows:
 - a. Commencement of the Work, through completion of demolition.
 - b. Insulation & cover board installation.
 - c. Base roofing layer.
 - d. Flashing.
 - e. Roof top sheet.
- E. Final Completion Construction Photographs: Take 20 photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.
- F. Additional Photographs: Architect may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.
1. Three days notice will be given, where feasible.
 2. In emergency situations, take additional photographs within 24 hours of request.
 3. Circumstances that could require additional photographs include, but are not limited to, the following:
 - a. Special events planned at Project site.
 - b. Immediate follow-up when on-site events result in construction damage or losses.
 - c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
 - d. Substantial Completion of a major phase or component of the Work.
 - e. Extra record photographs at time of final acceptance.
 - f. Owner's request for special publicity photographs.

1.7 CONSTRUCTION VIDEO RECORDINGS

- A. Video Recording Photographer: Engage a qualified videographer to record construction video recordings.
- B. Preconstruction Video Recording: Before starting demolition, record video of all roof drain piping from roof to main storm drain line and out to six feet from edge of building.
- C. Periodic Construction Video Recordings: Not Required
- D. Time-Lapse Sequence Construction Video Recordings: Not Required.

1.8 CONSTRUCTION WEBCAM

- A. Not Required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Submittal schedule requirements.
 - 2. Administrative and procedural requirements for submittals.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL FORMATS

- A. Submittal Information: Include the following information in each submittal:
 - 1. Project name.
 - 2. Date.
 - 3. Name of Architect.
 - 4. Name of Contractor.
 - 5. Name of firm or entity that prepared submittal.
 - 6. Names of subcontractor, manufacturer, and supplier.
 - 7. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
 - 8. Location(s) where product is to be installed, as appropriate.
 - 9. Other necessary identification.
 - 10. Remarks.
- B. Options: Identify options requiring selection by Architect.

- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
- D. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.
- E. Submittals for Utilizing Web-Based Project Management Software: Prepare submittals as PDF files, or other format indicated by Project management software.

1.5 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project management software website. Enter required data in web-based software site to fully identify submittal.
- B. Architect's Digital Data Files: Electronic copies of CAD Drawings of the Contract Drawings may be provided by Architect, at the Contractor's written request, for Contractor's use in preparing submittals.
 - 1. Architect will furnish, at their discretion, digital data drawing files of the Contract Drawings requested in writing by the Contractor for use in preparing Shop Drawings.
 - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Contractor shall execute an Electronic Data Licensing agreement. Form of agreement shall be provided by the Architect at time of Contractor's written request.
- C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
- D. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 - 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Resubmittal Review: Allow 15 days for review of each resubmittal.

- E. Resubmittals: Make resubmittals in same form as initial submittal.
- F. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- G. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp and/or transmittal.

1.6 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's written recommendations.
 - d. Manufacturer's installation instructions.
 - e. Standard color charts.
 - f. Statement of compliance with specified referenced standards.
 - g. Testing by recognized testing agency.
 - h. Application of testing agency labels and seals.
 - i. Notation of coordination requirements.
 - j. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams that show factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - 5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Dimensions.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal and control wiring.
 - f. Shopwork manufacturing instructions.

- g. Templates and patterns.
 - h. Schedules.
 - i. Compliance with specified standards.
 - j. Notation of coordination requirements.
 - k. Notation of dimensions established by field measurement.
 - l. Relationship and attachment to adjoining construction clearly indicated.
 - m. Seal and signature of professional engineer if specified.
 - 2. Sheet Size: Except for templates, patterns, and similar full-size Drawings, format Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 24 by 36 inches.
- C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.
- 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 - 2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 - 3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
 - 4. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
 - 5. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
 - 6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 - 7. Samples for Initial Selection: Submit manufacturer's physical color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal electronically with options selected.

8. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit two (2) sets of Samples. Architect will retain one (1) Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
9. It is a request of this Contract for the General Contractor to provide all color samples of all items to be selected to the Architect before action can be taken on selection of colors/finishes. Upon receipt of the complete package, the Architect shall provide final selections within 45 days. The General Contractor shall allow sufficient time for this to take place in his schedule.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- G. Certificates:
 1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
 2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
 3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
 5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation organization.
 - b. Date of evaluation.
 - c. Time period when report is in effect.
 - d. Product and manufacturers' names.
 - e. Description of product.
 - f. Test procedures and results.
 - g. Limitations of use.

1.7 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.8 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 - 1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ARCHITECT'S AND CONSTRUCTION MANAGER'S REVIEW

- A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it.
 - 1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action, as follows:
 - a. Reviewed, No Exceptions.
 - b. Reviewed, Note Comments.
 - c. Revise and Resubmit.
 - d. Revise and Partial Resubmit
 - e. Rejected, Resubmit.

Review is only for general conformance with the design concept and the information in the Contract Documents. Comments made as part of this review do not relieve Contractor from compliance with the Contract Documents, applicable codes, and laws, all of which have priority over this submittal. Architect does not warrant or represent that the information within the submittal is either accurate or complete. Contractor is responsible for: all dimensions, quantities, and performance requirements, which shall be confirmed and correlated at the job site; all information that pertains solely to fabrication processes or to techniques of construction; all coordination of the Work with that of other trades; and performing the Work in a satisfactory manner.

- 2. Submittals by Web-Based Project Management Software: Architect will indicate, on Project management software website, the appropriate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- D. Architect will return without review submittals received from sources other than Contractor.
- E. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 DELEGATED DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

1.3 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Architect regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Architect for clarification before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified is the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 INFORMATIONAL SUBMITTALS

- A. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.5 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, telephone number, and email address of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample-taking and testing and inspection.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Statement on condition of substrates and their acceptability for installation of product.
 2. Statement that products at Project site comply with requirements.
 3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 5. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Statement that equipment complies with requirements.
 2. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 3. Other required items indicated in individual Specification Sections.

1.6 QUALITY ASSURANCE

- A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E329 and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1.7 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
 - 2. Costs for retesting and reinspecting construction that replaces or is necessitated by Work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
 - 1. Engage a qualified testing agency to perform quality-control services.
 - a. Contractor will not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 - 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
 - 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 - 4. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform duties of Contractor.
- E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- G. Contractor's Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 6. Security and protection for samples and for testing and inspection equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
 2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Architect.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.
1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample-taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION **014000**

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SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
 - 1. For standards referenced by applicable building codes, comply with dates of standards as listed in building codes.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.3 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."
- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.
1. DIN - Deutsches Institut für Normung e.V.; www.din.de.
 2. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
 3. ICC - International Code Council; www.iccsafe.org.
 4. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.
- C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.
1. COE - Army Corps of Engineers; www.usace.army.mil.
 2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
 3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
 4. DOD - Department of Defense; www.quicksearch.dla.mil.
 5. DOE - Department of Energy; www.energy.gov.
 6. EPA - Environmental Protection Agency; www.epa.gov.
 7. FAA - Federal Aviation Administration; www.faa.gov.
 8. FG - Federal Government Publications; www.gpo.gov/fdsys.
 9. GSA - General Services Administration; www.gsa.gov.
 10. HUD - Department of Housing and Urban Development; www.hud.gov.
 11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; www.eetd.lbl.gov.
 12. OSHA - Occupational Safety & Health Administration; www.osha.gov.
 13. SD - Department of State; www.state.gov.
 14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; www.trb.org.
 15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
 16. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
 17. USDOJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
 18. USP - U.S. Pharmacopeial Convention; www.usp.org.
 19. USPS - United States Postal Service; www.usps.com.
- D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CFR - Code of Federal Regulations; Available from Government Printing Office; www.govinfo.gov.
 2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; www.quicksearch.dla.mil.
 3. DSCC - Defense Supply Center Columbus; (See FS).
 4. FED-STD - Federal Standard; (See FS).
 5. FS - Federal Specification; Available from DLA Document Services; www.quicksearch.dla.mil.
 - a. Available from Defense Standardization Program; www.dsp.dla.mil.
 - b. Available from General Services Administration; www.gsa.gov.
 - c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org.
 6. MILSPEC - Military Specification and Standards; (See DOD).
 7. USAB - United States Access Board; www.access-board.gov.
 8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).
- E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. CBHF; State of California; Department of Consumer Affairs; Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; www.bearhfti.ca.gov.
 2. CCR; California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; www.calregs.com.
 3. CDHS; California Department of Health Services; (See CDPH).
 4. CDPH; California Department of Public Health; Indoor Air Quality Program; www.cal-iaq.org.
 5. CPUC; California Public Utilities Commission; www.cpuc.ca.gov.
 6. SCAQMD; South Coast Air Quality Management District; www.aqmd.gov.
 7. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; www.txforestservation.tamu.edu.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION **014200**

SECTION 014339 - MOCKUPS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Integrated exterior mockups.

1.2 DEFINITIONS

- A. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as freestanding temporary built elements or part of permanent construction, consisting of multiple products, assemblies, and subassemblies.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Meet with Owner, Architect, testing and inspecting agency representative, and installers of major systems whose Work is included in integrated exterior mockups.
 - 2. Review locations and extent of mockups.
 - 3. Review testing procedures to be performed on mockups.
 - 4. Review and finalize schedule for mockups, and verify availability of materials, personnel, equipment, and facilities needed to complete mockups and testing and maintain schedule for the Work.

1.4 ACTION SUBMITTALS

- A. Shop Drawings: For integrated exterior mockups.

1.5 INFORMATIONAL SUBMITTALS

- A. Preconstruction Test Reports: For integrated exterior mockups.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified in accordance with ASTM E699 for testing indicated and accredited by IAS or ILAC Mutual Recognition Arrangement as complying with ISO/IEC 17025 and acceptable to Owner and Architect.
- B. Build mockups to do the following:
 - 1. Verify selections made under Sample submittals.
 - 2. Demonstrate aesthetic effects.
 - 3. Demonstrate the qualities of products and workmanship.

4. Demonstrate acceptable coordination between components and systems.
 5. Perform preconstruction testing, such as air- and water-leakage testing.
- C. Fabrication: Before fabricating or installing portions of the Work requiring mockups, build mockups for each form of construction and finish required. Use materials and installation methods as required for the Work.
1. Build mockups of size indicated.
 2. Build mockups in location indicated or, if not indicated, as directed by Architect.
 3. Employ supervisory personnel who will oversee mockup construction. Employ workers who will be employed to perform same tasks during the construction at Project.
 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 6. Demolish and remove mockups when directed unless otherwise indicated.
- D. Notifications:
1. Notify Architect seven days in advance of the dates and times when mockups will be constructed.
 2. Notify Architect fourteen days in advance of the dates and times when mockups will be tested.
 3. Allow seven days for initial review and each re-review of each mockup.
- E. Approval: Obtain Architect's approval of mockups before starting fabrication or construction of corresponding Work.
1. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 COORDINATION

- A. Coordinate schedule for construction of mockups, so construction, testing, and review of mockups do not impact Project schedule.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design support structure for free-standing mockups.
- B. Structural Performance:
1. Wind Loads: As indicated on Drawings.

- C. Mockup Testing Performance Requirements: Perform tests using design pressures and performance criteria indicated for assemblies and products that are specified in other Sections and incorporated into [integrated exterior] mockups.

2.2 INTEGRATED EXTERIOR MOCKUPS

- A. Construct integrated exterior mockups according to approved mockup Shop Drawings. Construct mockups to demonstrate constructability, coordination of trades, and sequencing of Work; and to ensure materials, components, subassemblies, assemblies, and interfaces integrate into a system complying with indicated performance and aesthetic requirements.
- B. Build integrated exterior mockups using installers and construction methods that will be used in completed construction.
- C. Use specified products that have been approved by Architect. Coordinate installation of materials and products specified in individual Specification Sections that include Work included in integrated exterior mockups.
- D. The Work of integrated exterior mockups includes, but is not limited to, the following:
 - 1. Precast architectural concrete with decorative finish.
- E. Photographic Documentation: Document construction of integrated exterior mockups with photographs in accordance with Section 013233 "Photographic Documentation." Provide photographs showing details of interface of different materials and assemblies.
 - 1. Document testing procedures, including water leakage and other deficiencies.
Photograph modifications to component interfaces intended to correct deficiencies.
- F. Provide and document modifications to construction details and interfaces between components and systems required to properly sequence the Work, or to pass performance testing requirements. Obtain Architect's approval for modifications.
- G. Retain approved mockups constructed in place. Incorporate fully into the Work.

PART 3 - EXECUTION – NOT USED
END OF SECTION 014339

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SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
 - 1. Owner's construction forces.
 - 2. Occupants of Project.
 - 3. Architect.
 - 4. Testing agencies.
 - 5. Personnel of authorities having jurisdiction.
- B. Sewer Service: Pay sewer-service use charges for sewer usage by all entities for construction operations.
- C. Water Service: Pay water-service use charges for water used by all entities for construction operations.
- D. Electric Power Service: Pay electric power service use charges, whether metered or otherwise, for electricity used by all entities engaged in construction activities at Project site. Coordinate transfer from temporary power to permanent power with the Owner. Contractor is responsible for all power use charges until the building is substantially complete.

1.3 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.
- B. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.
- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

- D. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold. Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and requirements for replacing water-damaged Work.
 2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
 3. Indicate methods to be used to avoid trapping water in finished work.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.5 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

- A. Field Offices: Coordinate with Owner if an interior location is available for a minimal field office.
- B. Materials: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended:
1. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1- 5/8-inch- OD top rails.
 2. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide concrete or galvanized steel bases for supporting posts.
 3. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.
 4. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

5. Dust Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches.

2.2 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
- C. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- D. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
- E. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
- F. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- G. Telephone Service: Provide cellular telephones for use by GC's Project Manager.

3.4 SUPPORT FACILITIES INSTALLATION

- A. Comply with the following:
 1. Provide construction for temporary field offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E136. Comply with NFPA 241.
 2. Utilize designated area within existing building for temporary field offices.
 3. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- D. Storage and Staging: Use designated areas of Project site for storage and staging needs.
- E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 2. Remove snow and ice as required to minimize accumulations.
- F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 1. Temporary Signs: Provide signs as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 2. Maintain and touch up signs so they are legible at all times.
- G. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- H. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."
- I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

- J. Temporary Elevator Use: Use of building elevators is **NOT** permitted.
- K. Existing Stair Usage: Limited use of one of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use. Egress use of all of Owner's facilities is permitted in emergencies.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
 - 1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- C. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- E. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.
 - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.
- F. Security Enclosure and Lockup: Coordinate with Owner to maintain existing levels of security for the roof area.
- G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- H. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
- I. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
 2. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
 3. Provide walk-off mats at each entrance through temporary partition.
- J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 MOISTURE AND MOLD CONTROL

- A. Moisture and Mold Protection: Protect stored materials and installed Work in accordance with Moisture and Mold Protection Plan.
- B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
 2. Protect stored and installed material from flowing or standing water.
 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 4. Remove standing water from decks.
 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 2. Keep interior spaces reasonably clean and protected from water damage.
 3. Periodically collect and remove waste containing cellulose or other organic matter.
 4. Discard or replace water-damaged material.
 5. Do not install material that is wet.
 6. Discard and replace stored or installed material that begins to grow mold.
 7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.
- D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.

2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

3.7 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION **015000**

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SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products, unless indicated otherwise.
 - 3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in Part 2 "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.
 - 1. Evaluation of Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification. Manufacturer's published attributes and characteristics of basis-of-design product also establish salient characteristics of products for purposes of evaluating comparable products.
- C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.

- D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:
 - 1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
 - 2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.
- E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 013300 "Submittal Procedures."

1.3 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products, using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

1.5 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of the Owner or endorsed by manufacturer to Owner.
 - 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of the Owner or endorsed by manufacturer to Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
 - 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
- B. Product Selection Procedures:
1. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - a. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."
 2. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed or an unnamed product that complies with requirements.
 - a. Non-limited list of products is indicated by the phrase "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following."
 - b. Provision of an unnamed product is not considered a substitution, if the product complies with requirements.
 3. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."
 4. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed or a product by an unnamed manufacturer that complies with requirements.
 - a. Non-limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following."

- b. Provision of products of an unnamed manufacturer is not considered a substitution, if the product complies with requirements.
- 5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require the phrase "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or a similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.
- E. Sustainable Product Selection: Where Specifications require product to meet sustainable product characteristics, select products complying with indicated requirements. Comply with requirements in Division 01 sustainability requirements Section and individual Specification Sections.
 - 1. Select products for which sustainable design documentation submittals are available from manufacturer.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with the following requirements:
 - 1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects, with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.
- B. Architect's Action on Comparable Products Submittal: If necessary, Architect will request additional information or documentation for evaluation, as specified in Section 013300 "Submittal Procedures."

1. Form of Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
 2. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- C. Submittal Requirements, Two-Step Process: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.
- D. Submittal Requirements, Single-Step Process: When acceptable to Architect, incorporate specified submittal requirements of individual Specification Section in combined submittal for comparable products. Approval by the Architect of Contractor's request for use of comparable product and of individual submittal requirements will also satisfy other submittal requirements.

PART 3 - EXECUTION (Not Used)
END OF SECTION 016000

SECTION 017100 - SITE PREPARATION

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Furnish all labor, materials, and equipment required and perform all site preparation; complete as shown on the Drawings, as required and as specified herein.
- B. Clear, grub, and strip areas actually needed for waste disposal, borrow, or site improvements within limits shown, specified or as required for this Work and acceptable to the Engineer.
- C. Do not injure or deface vegetation that is not designated for removal.
- D. Refer to Division 01 Specifications, and the Drawings for additional requirements related to Site Preparation.

1.2 DEFINITIONS

- A. Clearing: Cut and remove all timber, trees, stumps, brush, shrubs, roots, grass, weeds, rubbish, and any other objectionable material resting on or protruding through the surface of the ground.
- B. Grubbing: Removal of vegetation and other organic matter including stumps, buried logs, roots in excess of 1-1/2-in diameter, matted roots, brush, timber, concrete rubble, and other debris encountered to a depth of 18-in below original grade or 18-in beneath the bottom of foundations, whichever is deeper.
- C. Scalping: Removal of sod without removing more than upper 3-in of topsoil.
- D. Stripping: Removal of topsoil remaining after applicable scalping is completed.
- E. Project Limits: Areas, as shown or specified, within which work is to be performed.

1.3 QUALITY ASSURANCE

- A. Obtain Engineer's approval of staked limits for all work under this Section prior to commencing this portion of the Work.

1.4 SCHEDULING AND SEQUENCING

- A. Prepare Site only after adequate erosion and sediment controls are in place. Limit areas exposed uncontrolled to erosion during installation of temporary erosion and sediment controls to maximum of 0.5 acres.

1.5 LIMITS

- A. Clearing, grubbing, scalping, and stripping (unless noted otherwise) shall be performed to the following limits, but shall not extend beyond adjacent structures (provide structure protection as noted elsewhere in the Contract Documents and as acceptable to the Engineer) or the project limits.
 - 1. Excavation Excluding Trenches: 5-ft beyond top of cut slopes.

2. Trench Excavation: 10-ft on either side of trench centerline, regardless of actual trench width, or 2-ft beyond the top of trench excavation, whichever is greater.
3. Fill Areas: 5-ft beyond toe of permanent fill
4. Waste Disposal:
5. Clearing: 5-ft beyond perimeter.
6. Scalping and Stripping: Not required.
7. Grubbing: Around perimeter as necessary for neat finished appearance.
8. Structures: 15-ft outside of new structures.
9. Roadways: 10-ft from toe of fill or top of cut.
10. Overhead Utilities, Clearing, and Grubbing: Entire width of easements/ rights-of-way or construction area, whichever is greater.
11. Wherever grading is required: to 2-ft beyond grading limits, unless a larger dimension is specified or shown for specific activities.
12. Remove rubbish, trash, and junk from entire area within project limits.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 CLEARING

- A. Preserve and protect trees and other vegetation unless otherwise designated on the Drawings to be removed. Trees located within the site fencing shall be preserved, protected, and relocated.

3.2 GRUBBING

- A. See paragraph 1.2, Definitions.

3.3 SCALPING

- A. Do not remove sod until after clearing and grubbing is completed and resulting debris is removed.
- B. Scalp areas within limits shown, specified or required for the Work.

3.4 STRIPPING

- A. Do not remove topsoil until after scalping is completed.
- B. Strip areas within limits to minimum depth shown, specified or required for the Work. Do not remove subsoil with topsoil.
- C. Stockpile strippings separately from other excavated material.

3.5 DISPOSAL

- A. Clearing and Grubbing Debris:
 1. Dispose of debris offsite.
 2. Burning of debris onsite will not be allowed.
 3. Limit offsite disposal of clearing and grubbing debris to locations that are approved by federal, state, and local authorities. Offsite disposal shall not be visible from project.

- B. Scalpings: Disposal shall be as specified for clearing and grubbing debris.
- C. Strippings:
 - 1. Properly dispose of strippings that are unsuitable for topsoil or that exceed quantity required for topsoil offsite.
 - 2. Stockpile topsoil in sufficient quantity to meet project needs. Dispose of excess strippings as specified for clearing and grubbing.

3.6 PROTECTION

- A. Maintain protection until all work in the vicinity of the Work being protected has been completed.
- B. Do not operate heavy equipment or stockpile materials within 5-ft of the branch spread ("drip line") of existing trees.
- C. Restrict construction activities to those areas within the limits of construction designated on the Drawings. Adjacent properties and improvements thereon, which become damaged by construction operations, shall be promptly restored to their original condition, as acceptable to the affected property owners or the improvements of the Owner.

3.7 TREE REMOVAL OUTSIDE CLEARING LIMITS

- A. Remove within Project Limits:
 - 1. Dead, dying, leaning, or otherwise unsound trees that may strike and damage project facilities in falling, and as acceptable to the Engineer.
 - 2. Designated trees.
- B. Cut stumps off flush with ground, remove debris, and if disturbed, restore surrounding area to its original condition.

END OF SECTION 017100

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SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Coordination of Owner's portion of the Work.
 - 6. Coordination of Owner-installed products.
 - 7. Progress cleaning.
 - 8. Starting and adjusting.
 - 9. Protection of installed construction.
 - 10. Correction of the Work.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for coordination of and limits on use of Project site.
 - 2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
 - 3. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.3 INFORMATIONAL SUBMITTALS

- A. None required.

1.4 CLOSEOUT SUBMITTALS

- A. All warranty documents shall be submitted as informational submittals

1.5 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Comply with requirements specified in other Sections.
 - 1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.
- C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services; and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - 1. Description of the Work, including Specification Section number and paragraph, and Drawing sheet number and detail, where applicable.
 - 2. List of detrimental conditions, including substrates.
 - 3. List of unacceptable installation tolerances.
 - 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, equipment platforms, antenna arrays or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks and existing conditions. If discrepancies are discovered, notify Architect promptly.
- B. Engage personnel experienced in laying out the Work, using the following accepted surveying practices:
 - 1. Establish limits on use of Project site.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
- C. Building Lines and Levels: Locate and lay out control lines and levels for structures and roof and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels.

3.4 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb, and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.
- F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.

- G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.

3.5 CUTTING AND PATCHING

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of Work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to [minimize] [prevent] interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 5. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Architect. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS CLEANING

- A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.

3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls." and Section 017419 "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

- C. Comply with manufacturer's written instructions for temperature and relative humidity.

3.8 CORRECTION OF THE WORK

- A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.
- C. Restore permanent facilities used during construction to their specified condition.
- D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition construction waste.
 - 2. Recycling nonhazardous demolition construction waste.
 - 3. Disposing of nonhazardous demolition construction waste.

1.2 DEFINITIONS

- A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.
- C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner's property.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 7 days of date established for the Notice to Proceed.

1.4 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Include the following information:
 - 1. Material category.
 - 2. Generation point of waste.
 - 3. Total quantity of waste in tons.
 - 4. Quantity of waste salvaged, both estimated and actual in tons.
 - 5. Quantity of waste recycled, both estimated and actual in tons.

6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- D. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.5 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, or individual employed and assigned by General Contractor, with a record of successful waste management coordination of projects with similar requirements.
- B. Refrigerant Recovery Technician Qualifications: Comply with requirements in Section 024119 "Selective Demolition."
- C. Waste Management Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination."

1.6 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.

5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
 1. Distribute waste management plan to everyone concerned within three days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.
 2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

- A. Comply with requirements in Section 024119 "Selective Demolition" for salvaging demolition waste.
- B. Salvaged Items for Reuse in the Work:
 1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 3. Store items in a secure area until installation.
 4. Protect items from damage during transport and storage.
 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- C. Salvaged Items for Sale and Donation: Not permitted on Project site.

D. Salvaged Items for Owner's Use:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

3.3 RECYCLING DEMOLITION CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
- C. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 4. Store components off the ground and protect from the weather.
 5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor as often as required to prevent overfilling bins.

3.4 RECYCLING DEMOLITION WASTE

- A. Metals: Separate metals by type.
1. Structural Steel: Stack members according to size, type of member, and length.
 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- B. Piping: Reduce piping to straight lengths and store by material and size. Separate supports, hangers, valves, sprinklers, and other components by material and size.
- C. Conduit: Reduce conduit to straight lengths and store by material and size.

3.5 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

D. Paint: Seal containers and store by type.

3.6 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

END OF SECTION **017419**

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SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
- B. Related Requirements:
 - 1. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
 - 2. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest-control inspection.

1.4 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction, permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.
 5. Submit testing, adjusting, and balancing records.
 6. Submit sustainable design submittals not previously submitted.
 7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
 6. Advise Owner of changeover in utility services.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements.
 10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1.5 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:
1. Submit a final Application for Payment in accordance with Section 012900 "Payment Procedures."

2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1.6 LIST OF INCOMPLETE ITEMS

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, listed by orientation (East to West) on roof.
 2. Organize items applying to each space by major element, including categories for roof system, wall flashing, and equipment.
 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.
 4. Submit list of incomplete items in the following format:
 - a. MS Excel Electronic File: Architect will return annotated file.
 - b. Web-Based Project Software Upload: Utilize software feature for creating and updating list of incomplete items (punch list).

1.7 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
1. Submit on digital media acceptable to Owner and by uploading to web-based project software site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 - 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site of rubbish, waste material, litter, and other foreign substances.
 - b. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - c. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - d. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
 - e. Vacuum and mop concrete.
 - f. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - g. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - h. Remove labels that are not permanent.
 - i. Wipe surfaces of mechanical and electrical equipment[, elevator equipment,] and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - j. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - k. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - l. Clean ducts, blowers, and coils[if units were operated without filters during construction or that display contamination with particulate matter on inspection].

- 1) Clean HVAC system in compliance with NADCA ACR.
- m. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
- n. Clean strainers.
- o. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste-disposal requirements in Section 015000 "Temporary Facilities and Controls." and Section 017419 "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations required by Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION **017700**

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory manuals.
 - 2. Emergency manuals.
 - 3. Systems and equipment operation manuals.
 - 4. Systems and equipment maintenance manuals.
 - 5. Product maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

- A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operation and maintenance submittals is acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operation and maintenance manuals in the following format:
 - 1. Submit on digital media acceptable to Owner and by uploading to web-based project software site. Enable reviewer comments on draft submittals.
- C. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.
 - 1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.
- D. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.3 FORMAT OF OPERATION AND MAINTENANCE MANUALS

- A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

1.4 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Provide Manuals as required by the Owner based on the scope of work in the project.
- B. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 1. Title page.
 2. Table of contents.
 3. Manual contents.
- C. Title Page: Include the following information:
 1. Subject matter included in manual.
 2. Name and address of Project.
 3. Name and address of Owner.
 4. Date of submittal.
 5. Name and contact information for Contractor.
 6. Name and contact information for Construction Manager.
 7. Name and contact information for Architect.
 8. Name and contact information for Commissioning Authority.
 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 10. Cross-reference to related systems in other operation and maintenance manuals.
- D. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- E. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- F. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.5 EMERGENCY MANUALS

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Content: Organize manual into a separate section for each of the following:
 - 1. Type of emergency.
 - 2. Emergency instructions.
 - 3. Emergency procedures.
- C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 - 1. Fire.
 - 2. Flood.
 - 3. Gas leak.
 - 4. Water leak.
 - 5. Power failure.
 - 6. Water outage.
 - 7. System, subsystem, or equipment failure.
 - 8. Chemical release or spill.
- D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- E. Emergency Procedures: Include the following, as applicable:
 - 1. Instructions on stopping.
 - 2. Shutdown instructions for each type of emergency.
 - 3. Operating instructions for conditions outside normal operating limits.
 - 4. Required sequences for electric or electronic systems.
 - 5. Special operating instructions and procedures.

1.6 SYSTEMS AND EQUIPMENT OPERATION MANUALS

- A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.
- B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 - 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 - 2. Performance and design criteria if Contractor has delegated design responsibility.
 - 3. Operating standards.
 - 4. Operating procedures.
 - 5. Operating logs.
 - 6. Wiring diagrams.
 - 7. Control diagrams.

8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed and identify color coding where required for identification.

1.7 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.
- B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds, as described below.
- C. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.
- H. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
- 1.8 PRODUCT MAINTENANCE MANUALS**
- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- C. Product Information: Include the following, as applicable:

1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record specifications.
 - 3. Record Product Data.
- B. Related Requirements:
 - 1. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set(s) of marked-up record prints.
 - 2. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit PDF electronic files of scanned record prints.
 - 2) Submit Record Digital Data Files.
 - 3) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit 2 sets of annotated PDF electronic files of scanned Record Prints on individual digital flash memory sticks and one set uploaded to the project website.
 - 2) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit 2 sets of annotated PDF electronic files on individual digital flash memory sticks (may be shared with Record Drawings) and one copy of Project's Specifications, including addenda and Contract modifications uploaded to the project website.
- C. Record Product Data: Submit 2 sets of annotated PDF electronic files on individual digital flash memory sticks (may be shared with Record Drawings & Specs) and one copy uploaded to the project website of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

1.3 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding photographic documentation.
 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Annotated PDF electronic file.
 2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 3. Refer instances of uncertainty to Architect for resolution.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file.
3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

1.4 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
 5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.
- B. Format: Submit record specifications as annotated PDF electronic file of marked-up paper copy of Specifications.

1.5 RECORD PRODUCT DATA

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.
- B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.
- C. Format: Submit Record Product Data as annotated PDF electronic file of marked-up Product Data.

1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.6 MAINTENANCE OF RECORD DOCUMENTS

- A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Instruction in operation and maintenance of systems, subsystems, and equipment.
 - 2. Demonstration and training video recordings.

1.2 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

1.3 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
 - 1. At completion of training, submit complete training manual(s) for Owner's use prepared in same paper and PDF file format required for operation and maintenance manuals specified in Section 017823 "Operation and Maintenance Data."

1.4 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, experienced in operation and maintenance procedures and training.
- C. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination."

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.6 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

- 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

- a. System, subsystem, and equipment descriptions.
- b. Performance and design criteria if Contractor is delegated design responsibility.
- c. Operating standards.
- d. Regulatory requirements.
- e. Equipment function.
- f. Operating characteristics.
- g. Limiting conditions.
- h. Performance curves.

- 2. Documentation: Review the following items in detail:

- a. Emergency manuals.
- b. Systems and equipment maintenance manuals.
- c. Product maintenance manuals.
- d. Project Record Documents.
- e. Identification systems.
- f. Warranties and bonds.
- g. Maintenance service agreements and similar continuing commitments.

- 3. Troubleshooting: Include the following:

- a. Diagnostic instructions.
- b. Test and inspection procedures.

- 4. Maintenance: Include the following:

- a. Inspection procedures.
- b. Types of cleaning agents to be used and methods of cleaning.
- c. List of cleaning agents and methods of cleaning detrimental to product.

- d. Procedures for routine cleaning.
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
5. Repairs: Include the following:
- a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

1.7 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

1.8 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- C. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner, with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of an oral performance-based test.
- F. Cleanup: Collect used and leftover educational materials and remove from Project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.9 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full HD mode with vibration reduction technology.
 1. Submit 2 copies of video recordings on individual thumb drives by uploading to web-based Project software site.
- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.
- D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
- E. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 024113 – SELECTIVE SITE DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Selective demolition of built site elements.
- B. Selective demolition of building elements for alterations purposes.
- C. Abandonment and removal of existing utilities and utility structures only as required.

1.2 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2004.

1.3 SUBMITTALS

- A. See Section 013300 – Submittal Procedures
- B. Site Plan: Showing:
 - 1. Areas for temporary construction and field offices.
 - 2. Areas for temporary and permanent placement of removed materials.
- C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
 - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.4 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Company specializing in the type of work required.
 - 1. Minimum of 5 years of experience.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. None required in this section

PART 3 - EXECUTION

3.1 SCOPE

- A. This work consists of removal and satisfactory disposal of pavements, sidewalks, curbs, gutters and other obstructions not designated or permitted to remain, except obstructions to be removed under other contract items. It shall also include salvaging of designated materials and backfilling resulting trenches, holes and pits, except the area to be excavated. At locations where pavement, curbs or gutter, sidewalk, driveway, or footlaps are to be removed but are not to be replaced, the Contractor shall backfill the area with selected excavated or other suitable approved material at no direct payment.
- B. Within area of new construction, remove foundation walls and footings to a minimum of 2 feet below finished grade.
- C. Remove other items indicated, for salvage, relocation, and recycling.

3.2 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Provide, erect, and maintain temporary barriers and security devices.
 - 3. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 - 4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 5. Do not close or obstruct roadways or sidewalks without permit.
 - 6. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 - 7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
 - 8. The Contractor shall remove and dispose of all demolished pavements, sidewalks, curbs, gutters and other obstructions.
 - 9. Copies of agreements with property owners shall be furnished to the DPW Director prior to beginning of work.
 - 10. Saw cut may be required prior to removal.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Protect existing structures and other elements that are not to be removed.
 - 1. Provide bracing and shoring if structure if needed.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.
- D. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- E. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

3.3 MEASUREMENTS

- A. When the contract stipulates that payment will be made for the removal of specific items on a unit basis, measurement will be made by the unit stipulated in the contract.
- B. If the contract does not include pay items for removal of structures and obstructions, the removal work will not be measured for payment.
- C. Hauling salvaged materials to specified storage sites will not be measured for payment. Saw cut will be measured by the linear foot unless otherwise noted.

3.4 EXISTING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
- H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

3.5 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
 - 2. Remove items indicated on drawings.

- C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. Verify that abandoned services serve only abandoned facilities before removal.
 - 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- D. Protect existing work to remain.
 - 1. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 2. Repair adjacent construction and finishes damaged during removal work.
 - 3. Patch as specified for patching new work.

3.6 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.
- D. Designated salvageable material shall be removed, without unnecessary damage, in sections which may be readily transported. Salvageable material shall be stacked at specified storage areas by the Contractor. When no storage sites are specified, salvaged materials shall be delivered to the street maintenance yard. Materials not designated to be salvaged shall be disposed of, off the project, outside the view of the traveling public with written permission of the property owner on whose property the material is placed.

END OF SECTION 024113

SECTION 031100 – CONCRETE FORMWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Related Documents:

1. Drawings and general provisions of the Subcontract apply to this Section.
2. Review these documents for coordination with additional requirements and information that apply to work under this Section.

B. Section Includes:

1. Providing formwork for concrete and shotcrete.
2. Providing construction joint waterstops.
3. Installing cast-in anchors, inserts, sleeves and similar items furnished under other Sections.

C. Related Sections:

1. Division 03 Section "Concrete Reinforcing".
2. Division 03 Section "Cast-in-place Concrete."

1.2 REFERENCES

A. General:

1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
2. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.

B. ACI – American Concrete Institute:

1. ACI 301 Specifications for Structural Concrete
2. ACI 347 Guide to Formwork for Concrete

1.3 SUBMITTALS

- A. Product data for proprietary products, including forming accessories, waterstops and joint systems.
- B. Schedule showing Contractor's proposed location of construction joints not indicated on Drawings.
- C. Samples: Only as requested by Architect's Representative.
- D. Formwork Drawings: Design and construction of all forms and form supports, shoring and bracing methods, and their adequacy shall rest with the Contractor. Show the forms to be used indicating form construction, type and location of form ties, reveal strips, drip, groove, pattern for

and method of sealing forms against grout leakage and other items that affect exposed concrete visually. Lay out form ties in regular, symmetrical patterns.

- E. Survey anchor bolts location and elevation prior to casting concrete.

1.4 QUALITY ASSURANCE

PART 2 - PRODUCTS

2.1 FORM MATERIALS

- A. Form Materials: Plywood, steel, fiberglass, reinforced plastic, or any material that will produce concrete with the required finish and within the specified tolerances.
 - 1. Use of aluminum form materials in contact with concrete is prohibited.
- B. Smooth Form Finish: PS1 plywood intended for concrete formwork, edge sealed, no mill oil. Type B-B Plyform, MDO or HDO overlain plywood.
 - 1. Where finish is exposed to view in completed construction, use only overlain plywood.
- C. Foam Filler: ASTM C578; Type IX expanded polystyrene, or Type VII extruded polystyrene foam.

2.2 ACCESSORIES

- A. Form Ties: Snap off metal tie of fixed length with plastic cone, designed to prevent spalling of concrete upon removal. Provide units that will leave no metal within 1-inch (25 mm) of concrete surface.
- B. Form Release Agent: Water-based, colorless, nonstaining, chemically active agent that shall not impair bonding of paint or other coatings intended for use. Formulated for use on form facing material.
 - 1. Lumber, plywood or MDO overlain plywood: Aqua-Nox F by Nox-crete, or approved equal.
 - 2. HDO overlain plywood, steel or fiberglass: Nox-crete PCE by nox-crete, or approved equal.
- C. Expansion Joint Filler: Preformed asphalt impregnated fiber, ASTM D1751, 1/2 inch thick, unless otherwise noted.

PART 3 - EXECUTION

3.1 CONSTRUCTION OF FORMS

- A. Design, construct and maintain formwork in accordance with ACI 347.
- B. Provide positive means of adjustment, such as wedges and jacks, or shores and struts. Adjust formwork before and during concrete placement to achieve the specified tolerances.
- C. Tolerances: Finished work shall conform to tolerances of ACI 117.E.

1. Tolerance for offsets at panel edges in as-cast condition shall conform to ACI 117, Class A for Architectural Concrete, Class B for other surfaces exposed to view, and Class C for all other surfaces.
- D. Construct forms mortar-tight and in a manner to permit removal without damaging the concrete.
- E. Verify that sleeves and other openings, offsets, recesses, channel chases, anchors, ties and inserts are in place before concrete is placed.
- F. Earth Forms: Footing forms may be omitted and foundation concrete may be placed directly into neatly and accurately cut excavations, provided the excavation walls are stable, a minimum of one inch and maximum of three inches outside the concrete edges indicated on the drawings.
 1. Where sides are unstable or excavations are not accurately cut to tolerances of ACI 301, construct formwork to the extent required, at no additional cost to Owner.
 2. Hand trim sides and bottom of earth forms; remove loose dirt prior to placing concrete.
- G. Provide temporary openings in formwork at the base of wall and column forms to allow inspection and cleaning before concrete placement.
- H. Provide blockouts for mechanical and electrical work wherever necessary, even though not shown on the Drawings.
- I. Provide 3/4-inch (19 mm) chamfers for external corners.
- J. Plywood Forms at Exposed Surfaces:
 1. Keep number of panel joints to practical minimum.
 2. Ensure vertical joints are plumb and horizontal joints are level.
 3. Align form ties vertically and horizontally.
- K. Shoring: Shores and struts shall be provided with positive means of adjustment and settlement shall be taken up during construction.
- L. Form Release Agent: Apply a coating of form release agent immediately before use, but prior to installation of reinforcing steel and embedded items.
- M. Construction Joints:
 1. Provide where shown or noted on the Drawings or as approved by the Architect.
 2. Provide key indentations at formed joints.
 3. Prevent formation of shoulders and ledges.
- N. Waterstops: Install in construction joints where shown or noted on Drawings. Install in accordance with manufacturer's written instructions, including location, surface preparation, adhesive primer, and butting or lapping of ends.
- O. Expansion Joints: Provide expansion joints and isolation joints where shown or noted on Drawings. Place joint filler in straight line with edge held back 1/8 inch (3 mm) from concrete surface and secured to formwork or previously placed construction.
 1. Hold edge back by width of joint where joints are scheduled to receive sealant.

3.2 REMOVAL OF FORMWORK

- A. Do not remove forms until concrete has hardened and attained sufficient strength to permit safe removal and adequate support of inherent and imposed loads. It shall be the Contractor's responsibility to limit construction loads to those which can be carried safely by the developed strength of the structure at the time of loading and by formwork and shoring in-place at the time of loading.
- B. Remove forms carefully to avoid damaging corners and edges of exposed concrete. Prying against the face of concrete shall not be allowed.
- C. After concrete is placed, forms and shores shall remain in place for not less than the following period of time, subject to requirements for additional curing:
 - 1. Columns: 24 hours, unless otherwise noted.
 - 2. Walls: 2 days, unless otherwise noted. 7 days for Architectural Concrete and other concrete surfaces exposed at building exterior.
 - 3. Beams Sides: 2 days, unless otherwise noted.
 - 4. Beam Soffits: Maintain formwork 7 days; shore until concrete achieves design compressive strength, 7 days minimum.
 - 5. One-Way Slab Soffits: Maintain formwork 7 days; shore until concrete achieves design compressive strength, 7 days minimum.
 - 6. Flat Slabs: Maintain form facing material 7 days; shore until concrete achieves design compressive strength, 21 days minimum.
 - a. Upon removal of form facing material, install reshores as soon as practical, but not longer than 4 hours after stripping.
- D. Where concrete placing continues on upper levels, shoring may be required to be in place longer than minimum time noted for purpose of supporting weight of floor or roof pours above.
- E. Where forms are removed in less than 7 days, curing shall be continued as follows:
 - 1. Immediately following form removal thoroughly wet surface.
 - 2. Continue curing in accordance with provisions of Division 03 Section "Cast-in-Place Concrete".
- F. Reuse of Forms: Forms may be reused provided they are straight, clean, free from nails, dirt, hardened concrete, rust, and other injurious matter and edges and surfaces are in good condition.
 - 1. Clean and repair damage caused by placing, removal, or storage. Reuse of formwork that would reduce quality of exposed-to-view concrete will not be permitted.
 - 2. Forms shall not be reused for Architectural Concrete if there is evidence of surface wear or defect that would impair the quality of the surface.

END OF SECTION 031100

SECTION 032000 – CONCRETE REINFORCEMENT AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Related Documents:

1. Drawings and general provisions of the Contract apply to this Section.
2. Review these documents for coordination with additional requirements and information that apply to work under this Section.

B. Section Includes: Concrete reinforcement and accessories.

1.2 REFERENCES

A. General:

1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
2. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.

B. ACI – American Concrete Institute:

1. ACI 117 Tolerances for Concrete Construction
2. ACI 301 Specifications for Structural Concrete
3. ACI 315 Standard Practice for Detailing Reinforced Concrete Structures

C. ASTM International:

1. ASTM A1064 Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
2. ASTM A615 Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
3. ASTM A706 Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
4. ASTM A970 Standard Specification for Headed Steel Bars for Concrete Reinforcement

D. CRSI – Manual of Standard Practice.

E. ICBO - Evaluation Reports.

1.3 SUBMITTALS

A. Submit under provisions of Division 01 Section "General Requirements."

B. Shop Drawings: Prepare placing drawings in accordance with ACI 315. Show size, shape and location of bars and wire fabric in structure. Show splice locations and lengths. Where details are not shown, conform to standards of practice indicated in ACI 315 and submit for approval.

1. Bill reinforcing bars for walls on elevations. Bill reinforcing bars for slabs on plans. Plans and elevations need not be true views. When more than one wall or slab are identical, only one such wall or slab is required. Take sections to clarify the arrangement of reinforcement. Identify, but do not bill bars on sections.
 2. Unless the location of reinforcing is clear, give dimensions to some structural feature that will be readily distinguishable at time bars are placed.
 3. Make placing drawings complete, including the location of support bars and chairs, without reference to the design drawings.
- C. Submit data required to evaluate proposed mechanical splices.
- D. Submit manufacturer's certified mill test reports on each heat of reinforcing steel delivered, showing physical and chemical analysis before placing reinforcement.

1.4 QUALITY ASSURANCE

- A. Codes and Standards: Comply with provisions of ACI 301 CRSI's "Manual of Standard Practice", except where more stringent requirements are shown or specified.
- B. Requirements of Regulatory Agencies: Proprietary products, including bar couplers, shall have an active ICBO Evaluation Report.
- C. Material Quality Assurance: Mill test reports including chemical analysis, tensile properties and bend test shall be examined for all reinforcing.
- D. Maintain positive identification of reinforcing by heat number. Provide certified mill test reports to Testing Laboratory.
- E. Where positive identification cannot be made and procedures are not deemed adequate to ensure compliance, Testing Laboratory will randomly sample and make one tensile and one bend test from each 2-1/2 tons or fraction thereof of each size of reinforcement. Contractor will bear the cost of testing.

PART 2 - PRODUCTS

2.1 REINFORCING MATERIALS

- A. Bar Reinforcement: ASTM A615, Grade 60, deformed carbon bars.
1. ASTM A706, only where noted on Drawings.
- B. Headed Bar Reinforcement: ASTM A970.
- C. Spirals: ASTM A1064.
- D. Welded Wire Fabric: ASTM A1064.
- E. Smooth Dowels, ASTM A615, Grade 60, smooth; sawcut or grind one end to remove offsets; shop paint with iron oxide zinc chromate primer.
- F. Mechanical Bar Couplers: Provide mechanical couplers with a current ICC evaluation report. Coupler shall develop 160% percent of specified minimum yield strength of spliced reinforcement.

2.2 ACCESSORIES

- A. Tie Wire: Minimum 16-gage black annealed wire.
- B. Bar Supports:
 - 1. At surfaces not exposed to view in completed structure: Precast concrete bar supports with two 16 ga. embedded wires or CRSI Class 2 wire supports.
 - 2. Supports placed against ground or on top of vapor barrier: Precast concrete blocks not less than 3 inches square (1935 mm²) with two 16 ga embedded wires.
 - 3. At Architectural Concrete and surfaces exposed to weather: CRSI Class 2 stainless steel or CRSI Class 1 plastic protected.
 - 4. Where support is no closer to concrete surface than 1/2 inch (13 mm): CRSI Class 3 wire supports.

2.3 FABRICATION

- A. Fabricate reinforcement in accordance with ACI 315 where specific details are not shown.

PART 3 - EXECUTION

3.1 PLACEMENT

- A. Surface Condition of Reinforcement: Before placing concrete, clean reinforcement of loose scale, dirt, grease and other substances which would impair bond with concrete.
- B. Place reinforcement in accordance with the Drawings and the CRSI Manual.
 - 1. Steel bars shall be of size and length indicated, accurately bent or formed to shapes detailed or scheduled by experienced shops by methods that will not injure the materials. Reinforcing bars shall be shop fabricated to lengths and bends shown on the drawings. Fabrication tolerance shall be in accordance with the requirements of ACI 315.
 - 2. Reinforcing bars shall be as long as possible with a minimum number of joints.
 - 3. Steel reinforcement shall not be bent or straightened in a manner that will injure the material or the embedding concrete. Bars with kinks or bends not shown on the Drawings shall not be used. Heating of reinforcement for bending will not be permitted.
 - 4. Reinforcement shall be tagged with suitable identification to facilitate sorting and placing.
- C. Place reinforcing bars accurately as to spacing and clearance and securely tied at intersections and supports with wire and in such a manner as will preclude displacement during pouring of concrete. Placing tolerances shall be in conformance with the requirements of ACI 117.
- D. Place and secure reinforcement to maintain the proper distance and clearance between parallel bars and from the forms. Provide vertical steel with metal spreaders to maintain steel properly centered in the forms. Horizontal reinforcement shall be supported at proper height on concrete pads, chairs or transverse steel bars.
- E. After placing, maintain bars in a clean condition until completely embedded in concrete.
- F. Bars shall not be spaced closer than 1-1/2 diameters of the largest of two adjacent bars, 1-1/2 times the maximum aggregate size, nor one inch, except at bar laps. Where reinforcement in members is placed in two layers, the clear distance between layers shall be not less than one inch (25 mm) or more than 1-1/2 inches (13 mm) unless otherwise noted on the drawings. The

bars in the upper layer shall be placed directly above those in the bottom layer unless otherwise detailed.

- G. Coverage of bars shall be as shown and scheduled. Conform to ACI 301 where not indicated.
- H. Where obstruction prevents the intended placement of reinforcement, provide additional reinforcement as directed by the Architect around the obstruction.
- I. Splice bars as indicated by lapping and securely wiring together. Splices at locations other than those indicated are subject to the approval of the Architect. Splices of reinforcement shall not be made at the point of maximum stress. Splices shall provide sufficient lap to transfer the stress between bars by bond and shear. Bars shall be spread the minimum distance specified. Stagger splices of adjacent bars where possible.
- J. Reinforcing bars shall not have welded joints.
- K. Mechanical Bar Couplers: Install in accordance with applicable ICC evaluation report. Maintain clearance and coverage at coupler. Stagger couplers wherever practical.

3.2 FIELD INSPECTION

- A. Engineer will:
 - 1. Review Quality Assurance procedures for maintaining identification of steel. Collect certificates of compliance and test reports for reinforcing steel.
 - 2. Periodic visually inspection of placement of reinforcement for conformance with the Contract Documents and as required by IBC Chapter 17.

END OF SECTION 032000

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Related Documents:

1. Drawings and general provisions of the Subcontract apply to this Section.
2. Review these documents for coordination with additional requirements and information that apply to work under this Section.

B. Section Includes

1. Concrete reinforcement.
2. Cast-in-place concrete.

C. Related Sections:

1. Section 031000 - Formwork
2. Section 032000 - Concrete Reinforcement
3. Section 022600 – Concrete Finishes

1.2 REFERENCES

A. General:

1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
2. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.

B. American Concrete Institute (ACI):

1. ACI 211.1 Proportions for Normal, Heavyweight and Mass Concrete
2. ACI 301 Specifications for Structural Concrete
3. ACI 303R Guide to Cast-In-Place Architectural Concrete Practice
4. ACI 305.1 Specification for Hot Weather Concreting
5. ACI 306.1 Standard Specification for Cold Weather Concreting
6. ACI 308.1 Specification for Curing Concrete
7. ACI 309 Consolidation of Concrete
8. ACI 318 Building Code Requirements for Structural Concrete

C. ASTM International:

1. ASTM A615 Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
2. ASTM A1064 Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
3. ASTM C31 Making and Curing Concrete Test Specimens in the Field
4. ASTM C33 Concrete Aggregates
5. ASTM C94 Ready Mix Concrete

6. ASTM C143 Test Method for Slump of Portland Cement Concrete
7. ASTM C150 Portland Cement
8. ASTM C156 Test Method for Water Retention by Concrete Curing Materials
9. ASTM C1602 Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
10. ASTM C171 Sheet Materials for Curing Concrete
11. ASTM C172 Sampling of Freshly Mixed Concrete
12. ASTM C260 Air Entraining Admixtures for Concrete
13. ASTM C309 Liquid Membrane - Forming Compounds for Curing Concrete
14. ASTM C138 Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
15. ASTM C330 Lightweight Aggregates for Structural Concrete
16. ASTM C494 Chemical Admixtures for Concrete
17. ASTM C567 Test Method for Unit Weight of Structural Lightweight Concrete
18. ASTM C618 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
19. ASTM C881 Epoxy - Resin - Base Bonding Systems for Concrete
20. ASTM E1745 Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs

D. American Association of State Highway and Transportation Officials (AASHTO):

1. M182-60 - Burlap Cloth Made for Jute or Kelat.

E. American Institute of Steel Construction (AISC) Code of Standard Practice

1.3 SUBMITTALS

A. Mix design for each concrete mix sealed by a professional engineer or record of verification by trial mixtures or historical data in accordance with ACI 318 and Section 1.05 Quality Assurance

1. Include compression test data used to establish mix proportions.

B. Submit certification that all facilities of the ready-mix plant comply with the requirements of ASTM C94.

C. Material Certificates.

1. Cementitious materials, including fly ash.
2. Aggregates, including gradation and combined gradation.
3. Admixtures. Where more than one admixture is proposed, include statement from admixture manufacturer indicating that admixtures proposed for use are compatible, such that desirable effects of each admixture will be realized.

D. Product Data: Provide data form proprietary materials, including admixtures curing materials, and finish materials.

E. Submit ticket to Testing Laboratory for each batch of concrete delivered, bearing the following information. Refer to "Field Quality Control" Article of this Section.

F. Mix identification.

G. Weights of cementitious materials, aggregates, water and admixtures, and aggregate size.

- H. Samples: As requested by Testing Laboratory.
- I. Submit placement drawings, showing location of construction joints, if the location of construction joints will be different than shown on the construction drawings.
- J. Submit test reports from the independent testing agency for review by the Architect.

1.4 QUALITY ASSURANCE

- A. Standards: Comply with provisions of ACI 301, except where more stringent requirements are shown or specified. Evaluation and acceptance of concrete structures will be in accordance with ACI 301.
- B. Concrete Mix Design: Testing laboratory shall, under direction of its registered Civil Engineer, design concrete mixes. Each mix shall bear the signature, seal and registration expiration date of the engineer directing the design work. For mixes containing greater than twenty five percent fly ash, the Testing laboratory shall produce calculations and test batches in accordance with the recommendations of ACI 211.1 to determine the minimum water content and to confirm workability, curing time and compressive strength.
- C. Certificates of Compliance: Acceptability of the following materials will be based upon documentation furnished by the manufacturer identifying each batch of material and certifying compliance with the requirements specified:
 - 1. Portland cement.
 - 2. Fly ash.
 - 3. Chemical admixtures.
- D. Certified laboratory test reports: Before delivery of materials, certified copies of the reports of all tests required in referenced publications or otherwise specified here shall be submitted. The testing shall have been performed by an independent laboratory approved by the Architect within one year of submittal of test reports for approval. Test reports on a previously tested material shall be accompanied by notarized certificates from the manufacturer certifying that the previously tested material is of the same type, quality, manufacture and make as that proposed for use in this project. Certified test reports are required for the following:
 - 1. Portland Cement.
 - 2. Aggregates.
 - 3. Admixtures.
- E. Survey anchor bolts for placement and alignment prior to casting concrete.

PART 2 - PRODUCTS

2.1 FORM MATERIALS

- A. See Section 031000 – Concrete Formwork

2.2 REINFORCING STEEL

- A. Reinforcing Steel: ASTM A615 (unless otherwise noted on the drawings), of the yield grade specified on the drawings; deformed plain carbon steel bars.
 - 1. Recycled content shall be a minimum of 75% recycled post-consumer steel.

- B. Welded Wire Reinforcement: ASTM A1064.
- C. See Section 032000 – Concrete Reinforcement

2.3 CONCRETE MATERIALS

- A. Cement: Type 1 ASTM C150, normal-weight unless noted otherwise.
 - 1. Cement for lightweight concrete shall conform to ASTM C330.
- B. Cementitious materials and aggregates for exposed concrete shall be from same source throughout the work.
- C. Cementitious Material: An intimate blend of Portland cement and fly ash.
 - 1. Portland Cement: ASTM C150, Type II, low alkali.
 - 2. Fly Ash: ASTM C618, Class F with the following Modified ASTM requirements:
 - a. Loss of Ignition (L.O.I.): maximum 1%.
 - b. Sulfur Trioxide (SO₃) shall not exceed 3% by weight.
 - c. Water requirement maximum: 100% control.
 - d. $R = (CaO - 5\%) / (Fe_2O_3)$, where R (sulfate resistance) is 0.75 maximum and CaO/Fe₂O₃ is the percentage from fly ash oxide analysis.
- D. Aggregate for Standard Weight Concrete: ASTM C33.
 - 1. Maximum size aggregate shall be 1-1/2" long for footings and 3/4" for wall and slabs.
- E. Aggregate for Lightweight Concrete: ASTM C330. Lightweight aggregate shall be vacuum saturated expanded shale or clay produced by rotary kiln.
- F. Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete: ASTM C1602.
- G. Admixtures:
 - 1. General:
 - a. Where mix contains more than one admixture, all admixtures shall be supplied by one manufacturer. Manufacturer shall certify that admixtures are compatible such that desirable effects of each admixture will be realized.
 - b. Liquid admixtures shall be considered part of the total water.
- H. Waterproofing Admixture:
 - 1. The concrete waterproofing admixture shall be of the cementitious crystalline type that chemically controls and permanently fixes a non-soluble crystalline structure throughout the capillary voids of the concrete.
 - 2. The design shall include the use of the crystalline waterproofing repair materials that generate a non-soluble crystalline formation in the concrete.
 - 3. The concrete crystalline waterproofing admixture shall be specifically formulated as a concrete admixture.
 - 4. Xypex Admix C-1000.
 - 5. The dosage rate for the Xypex Admix C-1000 shall be 3% by weight of cement.
 - 6. Crack Bridging Capability: Requirement: Crystalline Waterproofing shall be capable of sealing static cracks up to 1/64".
 - 7.

- I. Lightweight Concrete shall contain an air entrainment admixture conforming to ASTM C260, to produce an air content of 3 to 5 percent at point of placement.
- J. Water Reducing Admixture: ASTM C494, Type A. Provide in all concrete at necessary dosage to facilitate placement.
- K. Mid to High Range Water Reducing Admixture: ASTM C494, Type F; polycarboxylate formulation. Provide in mid-range or high-range dosage as necessary for placement at the maximum water to cement ratio specified.
- L. Set Accelerating Admixture: ASTM C494, Type E, non-chloride. Subject to approval of Architect's Representative, provide in necessary dosage to accelerate set.
- M. Set Retarding Admixture: ASTM C494, Type D. Subject to approval of Architect's Representative, provide in necessary dosage to retard set.
- N. Color Admixtures: ASTM C579.

2.4 ACCESSORIES

- A. Curing Compounds: ASTM C309, which will not discolor concrete or affect bonding of other finishes applied thereover, and which restricts loss of water to not more than 0.500 grams per square centimeter of surface when tested per ASTM C156, "Test Method for Water Retention by Concrete Curing Materials."
 - 1. Type 1 Clear, Liquid membrane-forming compound, Class A Unrestricted
- B. Slab Curing Membrane: Membrane conforming to ASTM C171, non-staining.
- C. Burlap Sheet: AASHTO M182, class 3 or 4.
- D. Surface Hardener: Lapidolith, Hornolith, Kemi-Kal Liquid or equal.
- E. Rock Base: Clean, hard and durable gravel or crushed rock.
- F. Sand Cover: See Section 312323 Select Fill and Backfill
 - 1. Note native, uncompacted soil is acceptable backfill for pile-supported slabs.
 - 2. "Dry bottom" slabs for pile cap or grade beam formation shall be Select Fill. Inclusion of dry bottoms are at the discretion of the Contractor.
- G. Geofoam or Closed Cell Extruded Polystyrene (EPS): ASTM D6817, nominal density = 15psi, basis of design = EPS15 w termicide.
- H. Expansion Joint Filler: non-extruded premolded material composed of fiberboard impregnated with asphalt conforming to the requirements of ASTM D1751
- I. Waterstops: Waterstop-RX Volclay waterproofing by American Colloid Company or approved equal unless noted otherwise.

2.5 CONCRETE MIXES

- A. Aggregate: Coarse aggregate size number in accordance with ASTM C33 for normal-weight aggregate. Coarse aggregate size in accordance with ASTM C330 for lightweight aggregates. Maximum size aggregate = 3/4 inch.
- B. Slump: 5" maximum slump at point of placement in inches when tested in accordance with ASTM C143.
- C. Strength: Minimum compressive strength in psi per Design Drawings, tested in accordance with ASTM C39.
- D. Air Content: Max 6%
- E. Maximum water soluble chloride ion. (Cl⁻) = 0.30% for Class CI by percentage of cement material by weight.
- F. Pozzolan maximum content by percentage of cementitious material by weight.
 - 1. Fly Ash: Maximum 25%
 - 2. Calcined Pozzolan Content: Maximum 10%
 - 3. Silica Fume: Maximum 5%
- G. Water to Cementitious Material Ratio: Water-to-cementitious-material ratio not exceeding 0.45 by weight. Weight of water shall include all free moisture, including liquid admixtures. Mixes shall contain specified high range water reducing admixture at mid-range dosage as required to achieve specified slump.
- H. Lightweight Concrete: Equilibrium weight (at 100 days air dry) of 113 pcf plus or minus 3 pcf, ASTM C567. Mix shall contain 4 percent, plus or minus 1 percent, entrained air by volume at point of placement.
- I. Proposed mixes shall produce concrete to strengths specified with adequate workability and proper consistency to permit concrete to be worked into forms and around reinforcement without excessive segregation or bleeding.
- J. Mix design shall be subject to review by the Architect's Representative and the Testing Laboratory. Mixes shall be submitted in ample time for review and adjustment, if necessary.
- K. Add air entraining agent to normal weight concrete mix for work exposed to exterior.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify site conditions under provisions of Division 01 Section "General Requirements".
- B. Verify requirements for concrete cover over reinforcement.
- C. Verify that anchor bolts, embedded plates, reinforcement, sleeves and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

3.2 FORMWORK ERECTION

- A. Verify lines, levels, and measurement before proceeding with formwork.
- B. Hand trim sides and bottom of earth forms; remove loose dirt.
- C. Align form joints.
- D. Do not apply form release agent to concrete surfaces which receive special finishes that may be affected by agent.
- E. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

3.3 REINFORCEMENT & EMBEDDED ITEMS

- A. Place, support, and secure reinforcement and embedded items against displacement.
- B. Installation tolerances for anchor bolts for structural steel columns shall comply with the AISC Code of Standard Practice tolerances.
- C. Only items that are dimensionally located on the drawings may be embedded in concrete regardless of the trade responsible for placing them.
- D. Provide lap splices, standard hooks, and corner bars as indicated on the Drawings
- E. Provide suitable wire spacers, chairs, ties, brickettes etc. for supporting reinforcing steel in the proper position while placing concrete. Do not "wet stick" dowels.
- F. Locations and sizes of openings, sleeves, etc. required for other trades must be verified by these trades before placing concrete.
- G. All slots, sleeves, trenches, and other embedded items shall be set and secured against movement before the concrete is placed. See Architectural, Electrical, Mechanical, Plumbing, and Vendor drawings for sizes and locations.
- H. Conduits and pipes embedded in concrete slabs may be no larger than 1/3 of the slab thickness (based on the maximum outside diameter) and shall have a center-to-center spacing no less than three (3) conduit diameters. Regardless of diameter, the minimum clear spacing between conduits or reinforcing shall be one (1) inch.
- I. No aluminum conduits, devices, or fixtures may be embedded into the concrete so that the aluminum is in direct contact with the concrete.
- J. No conduits shall be placed in slabs within 12 inches of column face or face of bearing wall.

3.4 PLACING CONCRETE

- A. Notify the Architect at least 48 hours prior to commencement of concreting operations. No concrete shall be placed until all subgrade, formwork, reinforcing steel, embedded items and surfaces against which concrete is to be placed have been accepted by the Architect. The rate of delivery, haul time, missing time and hopper capacity shall be such that all mixed concrete delivered shall be placed in forms within 90 minutes from the time of the introduction of cement

and water into the mixer. No water shall be added after transit mixer leaves the batching plant without the approval of the Architect.

- B. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instruction.
- C. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with epoxy grout.
- D. Foundation surfaces against which concrete is to be placed must be free from standing water, mud and debris. Surfaces shall be clean and free from oil, objectionable coatings, and loose or unsound material.
- E. All surfaces of forms and embedded items shall be free of grout before placing concrete.
- F. Location of construction joints shall be as shown on the structural drawings.
- G. When ambient temperature is expected to exceed 80°F during placing or finishing operations, steps shall be taken in accordance with ACI 305, "Recommended Practices for Hot Weather Concreting", to reduce concrete temperature and water evaporation by proper attention to the ingredients, production methods, handling, placing, protection and curing. The Contractor shall submit a detailed hot weather concreting procedure to the A/E for approval at least two business days before concrete placement is planned. The Contractor's testing agency will produce trial batches in accordance with ACI 305. Slabs will be fog sprayed from the completion of screeding until curing is begun; the fog spray may be discontinued on sections during troweling.
- H. When ambient temperature is expected to be below 40°F during placing or finishing operations, steps shall be taken in accordance with ACI 306, "Recommended Practices for Cold Weather Concreting".

3.5 CURING AND PROTECTION

- A. Wheeling, working and walking on concrete shall be avoided for at least 24 hours after casting. Protect concrete from sun and rain. Do not permit concrete to become dry during curing period. Concrete shall not be subjected to any loads until concrete is completely cured, and until concrete has attained its 28-day strength.
- B. Protect concrete during and after curing from damage during subsequent building construction operations.
- C. Cover traffic areas with plywood or other suitable means for as long as necessary to protect concrete from damage.
- D. Concrete may be cured with the application of a curing blanket as described below or the use of a curing compound following the requirements of Section 2.04 or another alternative curing plan requested by the Contractor. It is the responsibility of the Contractor to adequately cure the concrete and the curing mechanism is their discretion. EOR is not responsible for non-structural shrinkage cracking that may occur with inadequate curing practices or with the substitution of a curing compound in lieu of curing blankets.
- E. Specific curing requirements for slabs shall include the following unless Contractor elects to submit an alternative plan: Immediately upon completion of finishing operation, the surface of slabs shall be sealed against moisture loss by the application of a curing blanket made of

polyethylene bonded to burlap in accordance with the manufacturer's instructions. Alternatively, waterproof curing paper may be used with edges lapped and sealed with tape. The curing membrane shall be weighted down. Tears and rips in curing membrane shall be repaired immediately during curing period. Curing shall be maintained for 7 days.

- F. Specific curing requirements for walls, beams and columns shall include the following unless Contractor elects to submit an alternative plan: Concrete in forms shall be kept moist until removal. Immediately upon removal of forms, an approved sprayed-on curing compound shall be applied to the concrete surfaces in strict compliance with the manufacturer's recommendations. Curing shall be maintained for 7 days.
- G. For above grade concrete sections over three feet thick except lean concrete (if required):
 - 1. Ten days before placing concrete, the results of a thermal test performed by the Contractor will be submitted to the Architect for approval. Thermal tests shall consist of a three-foot test cube of the design mix for the thick section instrumented with thermocouples by the Contractor's testing agency and monitored to determine whether the heat of hydration exceeds 150°F. If the temperature exceeds 150°F, the mix design will be revised or standard aggregate cooling utilized and a second test cube cast and tested at no additional cost to the Architect.
 - 2. The temperature gradient between the center and the surface of the section must not exceed 20°F during the first ten days of the controlled curing period. Thermocouples shall be installed by the Contractor's testing agency in the center and six inches from the surface at twenty-foot intervals and at the corners. The thermocouples are to be monitored continuously by the Contractor's testing agency and, if the temperature gradient exceeds 20°F, insulating blankets shall be placed over the surface. On surfaces with protruding reinforcing, such as the top of a wall, loose insulation will be used.

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Owner or Contractor will engage a qualified testing agency to perform material tests and inspections.
- B. If the Engineer is not engaged or notified by the Contractor to provide Code-required periodic inspection, the Contractor shall bear the expense and responsibility of engaging a qualified third party inspector, relieving the EOR of periodic inspection duties.
- C. Tests: Perform according to ACI 301.
 - 1. Definition of (1) set: minimum (3) cylinders for testing at (7) days, (3) cylinders for testing at (28) days, and additional (3) cylinders for reserve. Sample in accordance with ASTM C172.
 - 2. Testing Frequency: Obtain at least (1) set of cylinders for each 100 cubic yd. or fraction thereof of each concrete mixture placed each day. Minimum (1) set of cylinders per day of concrete placement.
 - 3. Samples shall be properly cured and stored. Prepare cylinders in accordance with ASTM C31.
 - 4. Test concrete cylinders in accordance with ASTM C39 by a qualified Testing Agency and submit results to Architect for review within (3) days.
 - 5. Testing Agency will provide slump tests per ASTM C143 air content testing per ASTM C231 or C173, temperature by ASTM C1064, density by ASTM C138 in the field for each set of cylinders or minimum (1) test each per day of concrete placement. Results shall be submitted to the Architect for review within (3) days.

END OF SECTION 033000

SECTION 033600 - CONCRETE FINISHES CLASSIC TEXTURE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Resurfacing of exterior concrete pavement.

1.2 RELATED SECTIONS

- A Section 03300 - Cast-In-Place Concrete: New concrete.
- B Section 03330 - Architectural Concrete.
- C Section 02751 - Portland Cements Concrete Paving.
- D Section 03925 - Concrete Resurfacing and Rehabilitation.

1.3 REFERENCES

- A ANSI A118.4 - Specifications for Latex Portland Cement Mortar.
- B ASTM C67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
- C ASTM A756 D & E — Standard Test Methods for Aging Test by Acceleration.
- D ASTM C1028 — Standard Test Methods for Coefficient of Friction.
- E ASTM D1242 — Standard Test Methods for Abrasion Resistance.
- F ASTM D570 — Standard Test Methods for Water Absorption.
- G ASTM D229 — Standard Test Methods for Chemical Resistance by 12 Reagents.

1.4 SUBMITALS

- A Submit under provisions of Section 01300.
- B Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C Shop Drawings.
- D Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, represent actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A Manufacturer Qualifications.
- B Installer Qualifications.
- C Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect. (8' – 0" x 8' – 0")
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Properly label and identify all containers as Sundeck (or Equal) materials.
- B. Deliver and store all materials to prevent damage to product and containers.
- C. Store all material in a clean, dry location where temperatures are maintained between 40 and 90 degrees Fahrenheit.
- D. Comply with manufacture's Material Safety Data Sheets (MSDS) for delivery, storage and handling of products.

1.7 PROJECT CONDITIONS

- A Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B Exterior Surfaces: Do not apply materials in wet weather.

PART 2 — PRODUCTS

2.1 MANUFACTURER

- A Basis of Design: SUNDECK Products Inc, U.S.A., which is located at: 805 Ave H Suite 508; Arlington TX, 76011; ASD. Toll Free Tel: 877-478-6335; Email: [request info: producttsundek.com](mailto:requestinfo@producttsundek.com); Web: www.sundek.com;
- B Approved Equal

2.2 CLASSIC TEXTURE SYSTEM

- A Copolymer Modified Cementitious Spray Texture Finish: Sundeck Classic Texture as manufactured by Sundeck Design Products.

2.3 ACCEPTABLE MATERIALS

- A Sundeck Premix:
 - 1. Copolymer modified thin set cement coating to be used in conjunction with Sundeck Additive, available in Tan, Grey, Red and White colors.
- B Sundeck Primer/Additive:
 - 1. Vinyl acetate emulsion with 53% solids content.

- C Sundeck Finish Coat:
 - 1. Water base acrylic color effect available in 16 standard colors or any customer color choice as special order.
- D Sundeck Clear Finish Coat:
 - 1. Water based Acrylic Clear coat with 20% solids.
- E No materials can be substituted other than those specified by Sundeck Products, Inc. or approved equals.

2.4 PERFORMANCE

- A Weighs lbs./ft @ (3/16").....1.3 lbs.
- B Thickness (Typical).....3/16".
- C Bond Strength (ASTM C297).....469 psi.
- D Accelerated Aging (ASTM A756 D&E)...Unaffected.
- E Freeze-Thaw (ASTM C67)...No Breakage <1% weight loss.
- F Slip Resistance (S.C.O.F., ASTM C1028).....81 Wet-1.03 dry.
- G Abrasion (ASTM D1242)... ..0328 in. = 3000 psi Concrete.
- H Absorption (ASTM D570).12.7%.
- Percolation (ASTM D1242) 48"/48hr...<1%.
- J Chemical Resistance (ASTM D229) 12 Reagents.....Unaffected.
- K Impact Resistance (Mil D3134 F.....No Breakage / < .62 in.
- L Concentrated Load Test (500 lb).... .. No Breakage / < .001 in.

PART 3 — EXECUTION

3.1 EXAMINATION

- A Concrete shall be structural sound, with required reinforcements and footings. Place and finish concrete in a skilled and workmanlike manner.
- B Install control joints throughout concrete as required to prevent cracking. All control joints must be honored and cannot be bridged with the Sundeck Classic Texture Effect installation.
- C Provide surface drainage at all points no less than 1/4 inch per linearfoot. Drainage correction is not guaranteed in the Sundeck Classic Texture Effect installation.

3.2 PREPARATION

- A. Clean concrete surface with high-pressure power washer.
- B. Remove dirt, grease, oil, curing compounds or other foreign substances, which may prevent proper bonding.
- C. Provide protective masking at all adjacent areas not to be coated.
- D. Repair cracks, surface damage and any corrective measures on concrete.

3.3 APPLICATION

- A. Spray or roll Sundeck Primer/Additive on area to be coated. Allow to dry and become

transparent.

- B. SUNDEK BASE COAT (Required for blending repairs and profiling rough concrete surfaces).
 - 1. Apply Sundek Base Coat using squeegee or trowel uniformly on area to be coated to a minimum thickness of 1/16" and allow drying.
 - 2. OPTIONAL MASONRY EFFECT - Place Sundek Masonry Effects templates at area to be coated.
- C. Mix Sundek Premix for Base Coat Application using mechanical agitation for 3-6 minutes as per mix design:
 - 1. Sundek Additive/Primer.....0.5.gal.....4.5 lbs
 - 2. Sundek Premix.....1 bag.....45 lbs
 - 3. *Clean Water..... 1 gal
 - 4. *Water ratio will vary with temperature and humidity.
- D. Mix Sundek Premix for Classic Texture using mechanical agitation for 3-6 minutes as per mix design:
 - 1. Sundek Additive/Primer0.3 gal.....4.5 lbs
 - 2. Sundek Premix.....1 Bag..... 45 lbs
 - 3. *Clean Water..... .0.6 gal
 - 4. *Water ratio will vary with temperature and humidity.
- E. Spray Sundek Classic Texture Premix thru hopper gun with air pressure at 12 lbs.
- F. Knock down sprayed texture after it loses its gloss.
- G. Spray Sundek Finish Coat to surface once is completely dry by roller or airless type sprayer and allow drying completely.
- H. OPTIONAL MASONRY EFFECTS - Remove Sundek Masonry Effects templates when Colored area dry.
- I. OPTIONAL SCORING EFFECTS - Score desired pattern into Sundek Classic Texture Effect using masonry cutting wheel and grinder.
- J. Apply Sundek Clear Finish Coat with roller or sprayer.
- K. Remove all protective masking upon drying of Sundek Clear Finish Coat.

3.4 PROTECTION

- A. Protect all phases of Sundek Classic Texture Effect from moisture, freezing and foot traffic for 24 hours. Prevent vehicular traffic for 72 hours from finish of application.
- B. Owner or General Contractor will provide protection for finished Sundek Classic Texture Effect from damage by others until acceptance by responsible party.

3.5 MAINTENANCE

- A. Power wash or rinse thoroughly on a regular basis as needed.
- B. A mild solution of muriatic acid can be use for tougher stains.
- C. Touch up and perform all minor repairs as needed with touch up kits provided by Sundek during installation.
- D. Re-coloring of coating can be done to refresh the appearance and promote longevity.

E Contact your Sundek dealer for further assistance.

END OF SECTION

SECTION 042000 - UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Concrete masonry units.
 - 2. Brick.
 - 3. Mortar and grout materials.
 - 4. Reinforcement.
 - 5. Ties and anchors.
 - 6. Embedded flashing.
 - 7. Accessories.
 - 8. Mortar and grout mixes.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project Site. Coordinate exact location with owner and architect.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For reinforcing steel: Indicate bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315R.
- C. Samples: For each type and color of exposed masonry unit and colored mortar.

1.4 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For each type and size of product and for masonry units, include data on material properties material test reports substantiating compliance with requirements.
- B. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
 - 1. Include test reports for mortar mixes required to comply with property specification. Test in accordance with ASTM C109/C109M for compressive strength, ASTM C1506 for water retention, and ASTM C91/C91M for air content.
 - 2. Include test reports, in accordance with ASTM C1019, for grout mixes required to comply with compressive strength requirement.

1.5 QUALITY ASSURANCE

- A. Sample Panel Mockups: Build sample panels to verify selections made under Sample submittals and to demonstrate aesthetic effects. Comply with requirements in Section 014000 "Quality Requirements" for mockups.
 - 1. Build sample panels for each type of exposed unit masonry construction in sizes approximately 48 inches long by 36 inches by full thickness.

1.6 FIELD CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602.

PART 2 - PRODUCTS

2.1 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with TMS 602, except as modified by requirements in the Contract Documents.
- B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work and will be within 10 ft. vertically and horizontally of a walking surface.
- C. Fire-Resistance Ratings: Comply with requirements for fire-resistance-rated assembly designs indicated.
 - 1. Where fire-resistance-rated construction is indicated, use the equivalent thickness method for masonry units in accordance with ACI 216.1 units are listed by UL or a qualified testing agency acceptable to authorities having jurisdiction.

2.2 CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
 - 1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.

- B. Integral Water Repellent: Provide units made with integral water repellent for exposed units where indicated.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ACM Chemistries.
 - b. Euclid Chemical Company (The); an RPM company.
 - c. GCP Applied Technologies Inc.
 - d. Master Builders Solutions.
 - e. Moxie International.
 - f. Insert manufacturer's name.
- C. CMUs: ASTM C90, normal weight medium weight lightweight unless otherwise indicated.
 - 1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2150 psi 2800 psi 3050 psi Insert value.
- D. Concrete Building Brick: ASTM C55, normal weight medium weight lightweight.
 - 1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2800 psi 3050 psi 3750 psi 4050 psi Insert value.
 - 2. Size (Actual Dimensions): 3-5/8 inches wide by 2-1/4 inches 2-3/4 inches 3-5/8 inches high by 7-5/8 inches long.

2.3 BRICK

- A. General: Provide shapes indicated and as follows, with exposed surfaces matching finish and color of exposed faces of adjacent units:
 - 1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
 - 2. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.
- B. Clay Face Brick: Facing brick complying with ASTM C216 hollow brick complying with ASTM C652, Class H40V (void areas between 25 and 40 percent of gross cross-sectional area), Grade SW Grade MW or Grade SW, Type FBX Type FBS Type FBA Type HBX Type HBS Type HBA.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following: Match existing brick in type, color, size and texture used at baseball field entry arch.
 - a. Acme Brick Company.
 - b. Belden Brick Company (The).
 - c. Boral Bricks, Inc; Boral Limited.
 - d. Endicott Clay Products Co.
 - e. General Shale Brick.
 - f. Glen-Gery Corporation.
 - 2. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3350 psi.

3. Initial Rate of Absorption: Less than 30 g/30 sq. in. per minute when tested in accordance with ASTM C67/C67M.
4. Efflorescence: Provide brick that has been tested in accordance with ASTM C67/C67M and is rated "not effloresced."
5. Surface Coating: Brick with colors or textures produced by application of coatings withstand 50 cycles of freezing and thawing in accordance with ASTM C67/C67M with no observable difference in the applied finish when viewed from 10 ft. or have a history of successful use in Project's area.
6. Size (Actual Dimensions): 3 5/8" wide by 2 1/4" high by 7 5/8" long.

2.4 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
 1. Alkali content will not be more than 0.1 percent when tested in accordance with ASTM C114.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.
- D. Masonry Cement: ASTM C91/C91M.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Cemex S.A.B. de C.V.
 - b. Holcim (US) Inc.
 - c. Lafarge North America Inc.
 - d. Lehigh Hanson; HeidelbergCement Group.
 - e. Prior Approved.
- E. Colored Cement Products: Packaged blend made from portland cement and hydrated lime masonry cement and mortar pigments, all complying with specified requirements, and containing no other ingredients.
 1. Colored Masonry Cement:
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Cemex S.A.B. de C.V.
 - 2) Holcim (US) Inc.
 - 3) Lafarge North America Inc.
 - 4) Lehigh Hanson; HeidelbergCement Group.
 - 5) Prior Approved Equal.
- F. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with CMUs containing integral water repellent from same manufacturer.

1. Manufacturers: Subject to compliance with requirements, **provide products by one of the following:**
 - a. ACM Chemistries.
 - b. Euclid Chemical Company (The); an RPM company.
 - c. GCP Applied Technologies Inc.
 - d. BASF Corp – Construction Chemicals.
 - e. Prior Approved Equal.

G. Water: Potable.

2.5 REINFORCEMENT

- A. Uncoated-Steel Reinforcing Bars: ASTM A615/A615M or ASTM A996/A996M, Grade 60.
- B. Masonry-Joint Reinforcement, General: ASTM A951/A951M.
 1. Interior Walls: Mill- Hot-dip galvanized carbon steel.
 2. Exterior Walls: Hot-dip galvanized carbon Stainless steel.
 3. Wire Size for Side Rods: 0.187-inch diameter.
 4. Wire Size for Cross Rods: 0.187-inch diameter.
 5. Wire Size for Veneer Ties: 0.187-inch diameter.
 6. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
 7. Provide in lengths of not less than 10 ft., with prefabricated corner and tee unit].
- C. Masonry-Joint Reinforcement for Single-Wythe Masonry: Ladder or truss type with single pair of side rods.
 1. Manufacturers: Subject to compliance with requirements provide products by one of the following:
 - a. Hohmann & Barnard, Inc.
 - b. Wire-Bond.
 - c. Prior Approved Equal.

2.6 TIES AND ANCHORS

- A. General: Ties and anchors extend at least 1-1/2 inches into veneer but with at least a 5/8-inch cover on outside face.
- B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:
 1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A1064/A1064M, with ASTM A153/A153M, Class B-2 coating.
- C. Individual Wire Ties: Rectangular units with closed ends and not less than 4 inches wide.
 1. Wire: Fabricate from 3/16-inch- 1/4-inch- diameter, hot-dip galvanized steel stainless steel wire.

- D. Partition Top Anchors: 0.105-inch- thick metal plate with a 3/8-inch- diameter metal rod 6 inches long welded to plate and with closed-end plastic tube fitted over rod that allows rod to move in and out of tube. Fabricate from steel, hot-dip galvanized after fabrication stainless steel.
- E. Rigid Anchors: Fabricate from steel bars 1-1/2 inches wide by 1/4 inch thick by 24 inches long, with ends turned up 2 inches or with cross pins unless otherwise indicated bent to configuration indicated.
 - 1. Corrosion Protection: Hot-dip galvanized to comply with ASTM A153/A153M Epoxy coating 0.020 inch thick Rust-inhibitive paint.
- F. Adjustable Masonry-Veneer Anchors:
 - 1. General: Provide anchors that allow vertical adjustment but resist a 100 lbf load in both tension and compression perpendicular to plane of wall without deforming or developing play in excess of 1/16 inch.
 - 2. Fabricate sheet metal anchor sections and other sheet metal parts from 0.0785-inch- thick steel sheet, galvanized after fabrication.
 - 3. Fabricate wire ties from 0.187-inch- diameter, hot-dip galvanized-steel wire unless otherwise indicated.
 - 4. Masonry-Veneer Anchors: Rib-stiffened, sheet metal anchor section with screw holes at top and bottom, projecting vertical leg with slotted hole for wire tie.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) FERO Corporation.
 - 2) Hohmann & Barnard, Inc.
 - 3) PROSOCO, Inc.
 - 4) Wire-Bond.
 - 5) Prior approved equal.

2.7 EMBEDDED FLASHING

- A. Metal Flashing: Provide metal flashing complying with SMACNA's "Architectural Sheet Metal Manual" and as follows:
 - 1. Stainless Steel: ASTM A240/A240M or ASTM A666, Type 304 Type 316, 0.016 inch thick.
 - 2. Copper: ASTM B370, Temper H00, cold-rolled copper sheet, 16 oz./sq. ft. weight or 0.0216 inch thick ASTM B370, Temper H01, high-yield copper sheet, 12 oz./sq. ft. weight or 0.0162 inch thick.
 - 3. Fabricate continuous flashings in sections 96 inches long minimum, but not exceeding 12 ft.. Provide splice plates at joints of formed, smooth metal flashing.
 - 4. Fabricate metal drip edges from stainless steel. Extend at least 3 inches into wall and 1/2 inch out from wall, with outer edge bent down 30 degrees and hemmed.
 - 5. Fabricate metal sealant stops from stainless steel. Extend at least 3 inches into wall and out to exterior face of wall. At exterior face of wall, bend metal back on itself for 3/4 inch and down into joint 1/4 inch to form a stop for retaining sealant backer rod.
 - 6. Fabricate metal expansion-joint strips from stainless steel to shapes indicated.
- B. Flexible Flashing: Use one of the following unless otherwise indicated:

1. Copper-Fabric Flashing: 3 oz./sq. ft. 5 oz./sq. ft. 7 oz./sq. ft. self-adhesive copper sheet bonded between two layers of glass-fiber cloth. Use only where flashing is fully concealed in masonry.
 - a. Manufacturers: Subject to compliance with requirements provide products by one of the following:
 - 1) Advanced Building Products Inc.
 - 2) Hohmann & Barnard, Inc.
 - 3) Wire-Bond.
 - 4) Prior approved equal.
- C. Single-Wythe CMU Flashing System: System of CMU cell flashing pans and interlocking CMU web covers made from UV-resistant, high-density polyethylene. Cell flashing pans have integral weep spouts designed to be built into mortar bed joints and that extend into the cell to prevent clogging with mortar.
 1. Manufacturers: Subject to compliance with requirements, **[provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:**
 - a. Mortar Net Solutions.
 - b. Insert manufacturer's name.

2.8 ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene urethane PVC.
- B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D2000, Designation M2AA-805 PVC, complying with ASTM D2287, Type PVC-65406 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
- C. Bond-Breaker Strips: Asphalt-saturated felt complying with ASTM D226/D226M, Type I (No. 15 asphalt felt).
- D. Weep/Cavity Vents: Use one the following unless otherwise indicated:
 1. Cellular Plastic Weep/Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth 1/8 inch less than depth of outer wythe, in color selected from manufacturer's standard.
 - a. Manufacturers: Subject to compliance with requirements provide products by one of the following:
 - 1) Advanced Building Products Inc.
 - 2) Heckmann Building Products, Inc.
 - 3) Hohmann & Barnard, Inc.
 - 4) Mortar Net Solutions.
 - 5) Wire-Bond.
 - 6) Prior approved equal.

- E. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity.
 - 1. Mortar Deflector: Strips, full depth of cavity 10 inches high, with dovetail-shaped notches that prevent clogging with mortar droppings.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Advanced Building Products Inc.
 - 2) Hohmann & Barnard, Inc.
 - 3) Keene Building Products.
 - 4) Mortar Net Solutions.
 - 5) Wire-Bond.
 - 6) York Manufacturing, Inc.
 - 7) Prior Approved Equal.
- F. Proprietary Acidic Masonry Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Diedrich Technologies, Inc.; a Hohmann & Barnard company.
 - b. EaCo Chem, Inc.
 - c. PROSOCO, Inc.
 - d. Prior Approved Equals.

2.9 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
 - 2. For exterior masonry, use portland cement-lime or mortar.
 - 3. For reinforced masonry, use portland cement-lime or mortar.
 - 4. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C270, Proportion Property Specification. Provide the following types of mortar for applications stated unless another type is indicated.
 - 1. For masonry below grade or in contact with earth, use Type M.
 - 2. For reinforced masonry, use Type M Type S Type N.
 - 3. For mortar parge coats, use Type S Type N.

4. For exterior, above-grade, load-bearing, nonload-bearing walls, and parapet walls; for interior load-bearing walls; for interior nonload-bearing partitions; and for other applications where another type is not indicated, use Type N.
 5. For interior nonload-bearing partitions, Type O may be used instead of Type N.
- D. Grout for Unit Masonry: Comply with ASTM C476.
1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with TMS 602 for dimensions of grout spaces and pour height.
 2. Proportion grout in accordance with ASTM C476, Table 1 or paragraph 4.2.1.2 for specified 28-day compressive strength indicated, but not less than 2000 psi.
 3. Provide grout with a slump of 8 to 11 inches] as measured in accordance with ASTM C143/C143M.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- B. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
- C. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested in accordance with ASTM C67/C67M. Allow units to absorb water so they are damp but not wet at time of laying.

3.2 TOLERANCES

- A. Dimensions and Locations of Elements:
1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch or minus 1/4 inch.
 2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch.
 3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.
- B. Lines and Levels:
1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 ft., or 1/2-inch maximum.
 2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 ft., 1/4 inch in 20 ft., or 1/2-inch maximum.
 3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 ft., 3/8 inch in 20 ft., or 1/2-inch maximum.
 4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 ft., 1/4 inch in 20 ft., or 1/2-inch maximum.

5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 ft., 3/8 inch in 20 ft., or 1/2-inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 ft., or 1/2-inch maximum.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
3. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch.

3.3 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.
- C. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- D. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
- E. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

3.4 MORTAR BEDDING AND JOINTING

- A. Lay CMUs as follows:
 1. Bed face shells in mortar and make head joints of depth equal to bed joints.
 2. Bed webs in mortar in all courses of piers, columns, and pilasters.
 3. Bed webs in mortar in grouted masonry, including starting course on footings.
 4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.
 5. Fully bed units and fill cells with mortar at anchors and ties as needed to fully embed anchors and ties in mortar.
- B. Lay solid masonry units and hollow brick with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Lay structural clay tile as follows:
 1. Lay vertical-cell units with full head joints unless otherwise indicated. Provide bed joints with full mortar coverage on face shells and webs.

2. Lay horizontal-cell units with full bed joints unless otherwise indicated. Keep drainage channels, if any, free of mortar. Form head joints with sufficient mortar so excess will be squeezed out as units are placed in position. Butter both sides of units to be placed, or butter one side of unit already in place and one side of unit to be placed.
 3. Maintain joint thicknesses indicated except for minor variations required to maintain bond alignment. If not indicated, lay walls with 1/4- to 3/8-inch- thick joints.
- D. Rake out mortar joints at pre-faced CMUs to a uniform depth of 1/4 inch and point with epoxy mortar to comply with epoxy-mortar manufacturer's written instructions.
- E. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- F. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

3.5 COMPOSITE MASONRY

- A. Bond wythes of composite masonry together using one of the following methods:
1. Masonry-Joint Reinforcement: Installed in horizontal mortar joints.
 - a. Where bed joints of both wythes align, use ladder-type reinforcement extending across both wythes.
 - b. Where bed joints of wythes do not align, use adjustable-type (two-piece-type) reinforcement with continuous horizontal wire in facing wythe attached to ties.
- B. Collar Joints: Solidly fill collar joints by parging face of first wythe that is laid and shoving units of other wythe into place.
- C. Corners: Provide interlocking masonry unit bond in each wythe and course at corners unless otherwise indicated.
- D. Intersecting and Abutting Walls: Unless vertical expansion or control joints are indicated at juncture, bond walls together as follows:
1. Provide individual metal ties not more than 16 inches o.c.
 2. Provide continuity with masonry-joint reinforcement by using prefabricated T-shaped units.
 3. Provide rigid metal anchors not more than 24 inches o.c. If used with hollow masonry units, embed ends in mortar-filled cores.

3.6 ANCHORED MASONRY VENEERS

- A. Anchor masonry veneers to masonry backup with masonry-veneer anchors to comply with the following requirements:
1. Embed connector sections and continuous wire in masonry joints.
 2. Locate anchor sections to allow maximum vertical differential movement of ties up and down.

3. Space anchors as indicated, but not more than 16 inches o.c. vertically and 16 inches o.c. horizontally, with not less than one anchor for each 2 sq. ft. of wall area. Install additional anchors within 12 inches of openings and at intervals, not exceeding 36 inches, around perimeter.

3.7 MASONRY-JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
 1. Space reinforcement not more than 16 inches o.c.
 2. Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls.
 3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings in addition to continuous reinforcement.
- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.
- D. Provide continuity at corners by using prefabricated L-shaped units.

3.8 FLASHING, WEEP HOLES, AND CAVITY VENTS

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.
- B. Install flashing as follows unless otherwise indicated:
 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
 2. At multiwythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of 8 inches, and through inner wythe to within 1/2 inch of the interior face of wall in exposed masonry. Where interior face of wall is to receive furring or framing, carry flashing completely through inner wythe and turn flashing up approximately 2 inches on interior face.

3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections. Allow inspectors access to scaffolding and work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements will be at Contractor's expense.
- B. Inspections: Special inspections in accordance with Level 1 in TMS 402.
 1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.

2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
 3. Place grout only after inspectors have verified proportions of site-prepared grout.
- C. Testing Prior to Construction: One set of tests.
- D. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.
- E. Clay Masonry Unit Test: For each type of unit provided, in accordance with ASTM C67/C67M for compressive strength.
- F. Concrete Masonry Unit Test: For each type of unit provided, in accordance with ASTM C140/C140M for compressive strength.
- G. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, in accordance with ASTM C780.
- H. Mortar Test (Property Specification): For each mix provided, in accordance with ASTM C780. Test mortar for mortar air content and compressive strength.
- I. Grout Test (Compressive Strength): For each mix provided, in accordance with ASTM C1019.

3.10 PARGING

- A. Parge exterior faces of below-grade masonry walls, where indicated, in two uniform coats to a total thickness of 3/4 inch. Dampen wall before applying first coat, and scarify first coat to ensure full bond to subsequent coat.
- B. Use a steel-trowel finish to produce a smooth, flat, dense surface with a maximum surface variation of 1/8 inch per foot. Form a wash at top of parging and a cove at bottom.
- C. Damp-cure parging for at least 24 hours and protect parging until cured.

3.11 CLEANING

- A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
 5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
 6. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.

7. Clean masonry with a proprietary acidic masonry cleaner applied according to manufacturer's written instructions.

3.12 MASONRY WASTE DISPOSAL

- A. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
 1. Do not dispose of masonry waste as fill within 18 inches of finished grade.
- B. Masonry Waste Recycling: Return broken CMUs not used as fill to manufacturer for recycling.
- C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION

SECTION 042200 - CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Concrete masonry units.
 - 2. Mortar and grout.
 - 3. Steel reinforcing bars.

1.3 DEFINITIONS

- A. Retain definitions remaining after this Section has been edited.
- B. CMU(s): Concrete masonry unit(s).
- C. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PERFORMANCE REQUIREMENTS

- A. Provide structural unit masonry that develops net-area compressive strengths at 28 days as indicated on Drawings
 - 1. Net-area compressive strength of masonry shall be determined from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For the following:
 - 1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
 - 2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.
- B. Material Certificates: For each type and size of the following:

1. Masonry units. Include material test reports substantiating compliance with requirements. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.
 2. Cementitious materials. Include brand, type, and name of manufacturer.
 3. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
 4. Grout mixes. Include description of type and proportions of ingredients.
- C. Reinforcing bar shop drawings
- D. Joint reinforcement product data.
- E. Anchors, ties, and metal accessories product data.
- F. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91 for air content.
 2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.
- G. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
- H. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.7 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C 1093 for testing indicated.
- B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.
- C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.
- D. Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.
- E. It is the Contractor's responsibility to engage a qualified Testing Agency for the monitoring of proportioning, mixing, and consistency of mortar and grout on-site and to provide strength testing per Section 3.08

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for use with dispensing silos. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in covered weatherproof dispensing silos.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.9 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides of walls and hold cover securely in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
 - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 - 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and higher and will remain so until masonry has dried, but not less than 7 days after completing cleaning.
- E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MASONRY UNITS, GENERAL

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.
- B. Fire-Resistance Ratings: Where indicated, provide units that comply with requirements for fire-resistance ratings indicated as determined by testing according to ASTM E 119, by equivalent masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

2.2 CONCRETE MASONRY UNITS

- A. CMUs: ASTM C 90, Type N-1.
 - 1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength as required for project designated f'_m
 - a. For $f'_m = 1500$ psi, provide a minimum 1900 psi compressive strength
 - b. For $f'_m = 2000$ psi, provide a minimum 2800 psi compressive strength.
 - 2. Density Classification: Normal weight
 - 3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
 - 4. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.
 - 5. Faces to Receive Plaster: Where units are indicated to receive a direct application of plaster, provide textured-face units made with gap-graded aggregates.

2.3 MASONRY LINTELS

- A. General: Provide one of the following:
- B. Concrete Lintels: ASTM C 1623, matching CMUs in color, texture, and density classification; and with reinforcing bars indicated. Provide lintels with net-area compressive strength not less than CMUs.
- C. Concrete Lintels: Precast or formed-in-place concrete lintels complying with requirements in Section 033000 "Cast-in-Place Concrete," and with reinforcing bars indicated.
- D. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam CMUs with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.4 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.
- D. Masonry Cement: ASTM C 91.

- E. Mortar Cement: ASTM C 1329.
- F. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979. Use only pigments with a record of satisfactory performance in masonry mortar.
- G. Aggregate for Mortar: ASTM C 144.
- H. Aggregate for Grout: ASTM C 404.
 - 1. Maximum size shall be 3/8"
- I. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with
- J. Water: Potable.
- K. Mortar and grout

2.5 REINFORCEMENT

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M Grade 60
- B. Horizontal Joint Reinforcement, ASTM A82
 - 1. 9-gage truss-type, galvanized.

2.6 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Pre-molded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene urethane or PVC.
- B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 or PVC, complying with ASTM D 2287, Type PVC-65406 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
- C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).
- D. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and hold reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.

2.7 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
 - 2. Use portland cement-lime mortar unless otherwise indicated.
 - 3. For exterior masonry, use portland cement-lime mortar.
 - 4. For reinforced masonry, use portland cement-lime mortar.

5. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C 270 Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.
 1. For reinforced masonry, use Type S
- D. Grout for Unit Masonry: Comply with ASTM C 476.
 1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
 2. Proportion grout in accordance with ASTM C 476, Table 1 or paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2000 psi.
 3. Provide grout with a slump of 8 to 10 inches as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Provide and install temporary bracing required insuring stability of all walls during construction and until erection of attached structural framing is completed. Temporary shoring is the responsibility of the Contractor.
- B. Build chases and recesses to accommodate items specified in this and other Sections.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

3.2 TOLERANCES

- A. Dimensions and Locations of Elements:
 1. For dimensions in cross section or elevation do not vary by more than plus 1/2 inch or minus 1/4 inch.
 2. For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch.
 3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.
- B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls do not vary from level by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
5. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm).
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3 mm).
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch (9 mm) or minus 1/4 inch (6 mm).
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm).

3.3 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Masonry: Unless otherwise indicated, lay exposed masonry in running bond. Do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.
- C. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar before laying fresh masonry.
- D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- E. Revise first paragraph below if flexible perimeter joint or thermal break is required.
- F. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
- G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.
- H. Fill cores in hollow CMUs with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

- I. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.
 1. Install compressible filler in joint between top of partition and underside of structure above.
 2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch (13-mm) clearance between end of anchor rod and end of tube. Space anchors 48 inches (1200 mm) o.c. unless otherwise indicated.
 3. Wedge non-load-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.

3.4 MORTAR BEDDING AND JOINTING

- A. Lay hollow CMUs as follows:
 1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
 2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
 3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
 4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.
- B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.
- E. Full head and bed joints shall be provided.
- F. Mortar shall be mixed onsite.
- G. Provide masonry veneer anchors at 16 inches OC set on coursing and attached to all beams, columns, partitions, and walls abutting or embedded in masonry unless noted otherwise on Architectural and Structural Drawings.

3.5 LINTELS AND BOND BEAMS

- A. Provide lintels and bond beams as indicated on Drawings
- B. Horizontal reinforcing bars in bond beams and/or lintel blocks are to be continuous and solid grouted in place and to extend not less than 20 bar diameters or 16 inches (whichever is greater) past the opening face.
- C. Bond beams are to be continuous at control joints, unless otherwise noted.

3.6 MASONRY JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).
 - 1. Space reinforcement not more than 16 inches o.c.
 - 2. Space reinforcement not more than 8 inches o.c. in corners and intersections
- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.
- D. Provide continuity at corners by using prefabricated L-shaped units.
- E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.7 INSTALLATION

- A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
 - 1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
 - 2. All bars shall be tied at splices.
 - 3. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other loads that may be placed on them during construction.
 - 4. All formwork is the responsibility of the Contractor.
- B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.
 - 1. Vertical reinforcing bars may be spliced in 6ft and 8ft lengths provided that the splices in adjacent bars are staggered and arranged so that not more than 1/3 of the total number of bars are spliced at any location and not more than 1/2 of the total number of bars are spliced at mid-height of the wall.
 - 2. All bars shall be tied at splices.
 - 3. Vertical bars shall be held in position at top and bottom and at intervals not exceeding 8ft with a minimum clearance of 1/4 inch from the edge of masonry and not less than one bar diameter between bars.
 - 4. Bars shall lap above foundation level and between floors.
 - 5. Reinforcement shall be continuous from level to level.
- C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
 - 1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
 - 2. Limit height of vertical grout pours to not more than 60 inches for low lift grouting
 - 3. If high lift grouting, provide clean-outs and adequate vibration. Max grout pour height for high lift grouting is 12 ft.

4. All cells containing vertical reinforcing steel, lintel beams and bond beams are to be solid grouted.
5. Grouted cell locations shall be continuous from level to level.

3.8 FIELD QUALITY CONTROL

- A. EOR will perform periodic, visual inspections in accordance with the General Notes on the Drawings. Any inspection shall not, in any way, relieve the Contractor of the final responsibility of the installation of the masonry walls with accordance with the Contract Drawings and Specifications
 1. The Engineer shall observe the placement of mortar, grout, and masonry units and the placement of reinforcing steel for compliance with the Contract Documents with periodic pre-pour inspection as follows with ACI 530 Quality Assurance Level B: the first pour, minimum (1) additional pre-pour inspection for subsequent pours, and (1) final prepour inspection for the top of wall.
 2. Visual Inspection is intended to provide quality control and does not alleviate the Contractor from final responsibility of installation of the masonry per drawings or guarantee the Contractor's work
 3. First course grout placement shall not occur until the EOR has performed aforementioned visual inspection.
- B. If the Engineer is not engaged or notified by the Contractor to provide Code-required periodic inspection, the Contractor shall bear the expense and responsibility of engaging a qualified third party inspector, relieving the EOR of periodic inspection duties.
- C. The Testing Agency shall monitor the proportioning, mixing, and consistency of mortar and grout in accordance with ACI 530 Quality Assurance Level B.
- D. Grout Prism Compressive Testing
 1. One set shall equal (3) prisms each for testing at (7) days and (28) days, plus retain (3) additional prisms for any required additional testing.
 2. One set of tests for each 3000 sq. ft. of wall area or portion thereof, but not less than (2) tests for each testing period or (1) test per day of grout placement.
 3. Build and test masonry grout prisms in accordance with ASTM C1019.
 4. Build grout prisms in the presence of the Testing Agency.
- E. Mortar Cube Testing
 1. One set shall equal (3) prisms each for testing at (7) days and (28) days, plus retain (3) additional prisms for any required additional testing.
 2. One set of tests for each 3000 sq. ft. of wall area or portion thereof, but not less than (1) test for each mortar type.
 3. Build masonry mortar cubes in accordance with ASTM C270 in the presence of the Testing Agency.

3.9 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 - 3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
 - 5. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

END OF SECTION 042200

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SECTION 047200 - CAST STONE MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Trim units.
 - 2. Accessories.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Show fabrication and installation details for cast stone units. Include dimensions, details of reinforcement and anchorages if any, and indication of finished faces.
- C. Samples:
 - 1. For each color and texture of cast stone required, 8 inches square in size.
 - 2. For each trim shape required, 8 inches in length.
 - 3. For colors morian.

1.4 INFORMATIONAL SUBMITTALS

- A. Material test reports.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer of cast stone units similar to those indicated for this Project, that has sufficient production capacity to manufacture required units, and is a plant certified by CSI.

PART 2 - PRODUCTS

2.1 CAST STONE UNITS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Advances Cast Stone, Inc.
 2. Basscu Cast Stone
 3. Siteworks, Inc.
 4. Centennial Cast Stone
 5. Prior Approved Equal.
- B. Cast Stone Units: Comply with ASTM C1364.
1. Units are manufactured using the manufacturer's selected vibrant dry tamp wet-cast machine-made method.
 2. Decorative elements including pilasters column covers medallions balustrades steps steps and risers bollards benches curbing fountains items as indicated on Drawings.
- C. Fabricate units with sharp arris and accurately reproduced details, with indicated texture on all exposed surfaces unless otherwise indicated.
1. Slope exposed horizontal surfaces 1:12 to drain unless otherwise indicated.
 2. Provide drips on projecting elements unless otherwise indicated.
- D. Cure Units as Follows:
1. Cure units in enclosed, moist curing room at 95 percent relative humidity and temperature of 100 deg F for 12 hours or 70 deg F for 16 hours.
 2. Keep units damp and continue curing to comply with one of the following:
 - a. No fewer than five days at mean daily temperature of 70 deg F or above.
 - b. No fewer than seven days at mean daily temperature of 50 deg F or above.
- E. Acid etch units after curing to remove cement film from surfaces to be exposed to view.
- F. Colors and Textures: Match Architect's samples Match existing units As selected by Architect from manufacturer's full range Insert description.

2.2 ACCESSORIES

- A. Anchors: Type and size indicated, fabricated from steel complying with ASTM A36/A36M and hot-dip galvanized to comply with ASTM A123/A123M.
- B. Dowels: 1/2-inch- diameter round bars, fabricated from steel complying with ASTM A36/A36M and hot-dip galvanized to comply with ASTM A123/A123M.
- C. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cast stone manufacturer and expressly approved by cleaner manufacturer for use on cast stone and adjacent masonry materials.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Diedrich Technologies, Inc.; a Hohmann & Barnard company.
 - b. EaCo Chem, Inc.
 - c. PROSOCO, Inc.
 - d. Prior Approved Equal.

2.3 MORTAR MIXES

- A. Comply with requirements in Section 042000 "Unit Masonry" Section 042613 "Masonry Veneer" for mortar mixes.
- B. Comply with ASTM C270, Proportion Specification.
 - 1. For setting mortar, use Type S.
 - 2. For pointing mortar, use Type N.

2.4 SOURCE QUALITY CONTROL

- A. Engage a qualified independent testing agency to sample and test cast stone units according to ASTM C1364.

PART 3 - EXECUTION

3.1 SETTING CAST STONE IN MORTAR

- A. Install cast stone units to comply with requirements in Section 042000 "Unit Masonry."
- B. Set cast stone as indicated on Drawings. Set units accurately in locations indicated, with edges and faces aligned according to established relationships and indicated tolerances.
- C. Set units in full bed of mortar with full head joints unless otherwise indicated.
 - 1. Fill dowel holes and anchor slots with mortar.
 - 2. Fill collar joints solid as units are set.
 - 3. Build concealed flashing into mortar joints as units are set.
 - 4. Keep head joints in copings and between other units with exposed horizontal surfaces open to receive sealant.
 - 5. Keep joints at shelf angles open to receive sealant.
- D. Rake out joints for pointing with mortar to depths of not less than 3/4 inch. Rake joints to uniform depths with square bottoms and clean sides. Scrub faces of units to remove excess mortar as joints are raked.
- E. Point mortar joints by placing and compacting mortar in layers not greater than 3/8 inch. Compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
- F. Tool exposed joints slightly concave when thumbprint hard. Use a smooth plastic jointer larger than joint thickness.
- G. Rake out joints for pointing with sealant to depths of not less than 3/4 inch. Scrub faces of units to remove excess mortar as joints are raked.
- H. Provide sealant joints at head joints of copings and other horizontal surfaces; at expansion, control, and pressure-relieving joints; and at locations indicated.
 - 1. Keep joints free of mortar and other rigid materials.

2. Prepare and apply sealant of type and at locations indicated to comply with applicable requirements in Section 079200 "Joint Sealants."

3.2 SETTING ANCHORED CAST STONE WITH SEALANT-FILLED JOINTS

- A. Set cast stone as indicated in TMS 604.
- B. Set cast stone as indicated on Drawings. Set units accurately in locations indicated, with edges and faces aligned according to established relationships and indicated tolerances.
 1. Install anchors, supports, fasteners, and other attachments indicated or necessary to secure units in place.
 2. Shim and adjust anchors, supports, and accessories to set cast stone in locations indicated with uniform joints.
- C. Fill anchor holes with sealant.
 1. Where dowel holes occur at pressure-relieving joints, provide compressible material at ends of dowels.
- D. Set cast stone supported on clip or continuous angles on resilient setting shims. Use material of thickness required to maintain uniform joint widths. Hold shims back from face of cast stone a distance at least equal to width of joint.
- E. Prepare and apply sealant of type and at locations indicated to comply with applicable requirements in Section 079200 "Joint Sealants."

3.3 INSTALLATION TOLERANCES

- A. Variation from Plumb: Do not exceed 1/8 inch in 10 ft. or 1/2 inch maximum.
- B. Variation from Level: Do not exceed 1/8 inch in 10 ft. or 1/2 inch maximum.
- C. Variation in Joint Width: Do not vary joint thickness more than 1/8 inch in 36 inches or one-fourth of nominal joint width, whichever is less.
- D. Variation in Plane between Adjacent Surfaces (Lipping): Do not vary from flush alignment with adjacent units or adjacent surfaces indicated to be flush with units by more than 1/16 inch, except where variation is due to warpage of units within tolerances specified.

3.4 ADJUSTING AND CLEANING

- A. Remove and replace stained and otherwise damaged units and units not matching approved Samples. Cast stone may be repaired if methods and results are approved by Architect.
- B. Replace units in a manner that results in cast stone matching approved Samples, complying with other requirements, and showing no evidence of replacement.
- C. In-Progress Cleaning: Clean cast stone as work progresses.
 1. Remove mortar fins and smears before tooling joints.
 2. Remove excess sealant immediately, including spills, smears, and spatter.

- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed cast stone as follows:
1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 2. Test cleaning methods on sample; leave one sample uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of cast stone.
 3. Protect adjacent surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 4. Wet surfaces with water before applying cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
 5. Clean cast stone by methods described in Cast Stone Institute Technical Bulletin #39.
 6. Clean cast stone with proprietary acidic cleaner applied according to manufacturer's written instructions.

END OF SECTION

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 - SUMMARY

1.1 RELATED DOCUMENTS:

1. Drawings and general provisions of the Contract apply to this Section.
2. Review these documents for coordination with additional requirements and information that apply to work under this Section.

B. Section Includes:

1. Structural steel framing members, support members, bracing members and connections.
2. Base plates, leveling plates, anchor bolts, leveling nuts, shear stud connectors, deformed bars welded to structural steel, and bolts.
3. Grouting under base plates.
4. Verification of anchor bolt setting and levels to assure adequate fit of the steel work.

C. Related Sections:

1. Division 05 Section "Steel Roof Decking".
2. Division 05 Section "Steel Joists".

1.2 REFERENCES

A. General:

1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
2. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.

B. ASTM International:

1. ASTM A27 / A27M Standard Specification for Steel Castings, Carbon, for General Application
2. ASTM A47 / A47M Standard Specification for Ferritic Malleable Iron Castings
3. ASTM A53 / A53M Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
4. ASTM A108 Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished
5. ASTM A123 / A123M Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
6. ASTM A153 / A153M Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
7. ASTM A283 / A283M Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
8. ASTM A307 Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
9. ASTM F3125 Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength

10. ASTM A385 Practice for Providing High-Quality Zinc Coatings (Hot-Dip)
11. ASTM A500 / A500M Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
12. ASTM A525 General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
13. ASTM A36 / A36M Standard Specification for Carbon Structural Steel
14. ASTM A572 / A572M Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
15. ASTM A780 Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
16. ASTM A992 / A992M Standard Specification for Structural Steel Shapes
17. ASTM D2092 Recommended Practices for Preparation of Zinc-Coated Steel Surfaces for Painting
18. ASTM F1554 Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength

C. American Welding Society:

1. AWS D1.1 - Structural Welding Code

D. American Institute of Steel Construction (AISC):

1. AISC 303 – Code of Standard Practice for Steel Buildings and Bridges except the following shall be added to 3.1 (f): Horizontal and vertical dimensions may not be shown entirely on the Structural Drawings.
2. AISC 360 – Specification for Structural Steel Buildings
3. AISC - Steel Construction Manual
4. RCSC -Research Council on Structural Connections "Specification for Structural Joints Using High-Strength Bolts

1.3 DEFINITIONS

- A. Architecturally Exposed Structural Steel (AESS): Structural steel framing noted as AESS on Drawings.
- B. Heavy Shapes: ASTM A6, Group 3 shapes with flanges thicker than 1-1/2 inches (12.5 mm), Group 4 shapes, and Group 5 shapes; welded built-up members with web or flange plates exceeding 1-1/2 inches (12.5 mm) in thickness

1.4 SUBMITTALS

- A. Shop drawings for structural steel fabrications shall be submitted for review prior to fabrication. Examples include, but are not limited to:
 1. Complete fabrication and erection plans and procedures giving full information on aspects of the erection which will affect alignment, plumb and dimensional accuracy of the structure.
 2. Connections including size and spacing of bolts and welds.
 3. Indicate profiles, sizes, spacing, and locations of structural members, openings, camber and attachments. Indicate welded connections with AWS welding symbols. Indicate net weld lengths. Details of welding materials, equipment, sequence and technique to be used. Shop and erection details incorporating seismic critical welds shall include explicit references to corresponding weld procedure specifications.

4. The Contractor shall survey, review and confirm as-built conditions prior to developing shop drawings. Field modifications to suit as-built conditions shall be at the Contractor's expense.
 5. Stamped drawings by an Engineer licensed in Louisiana shall be provided for:
 - a. Moment connections (beam to beam, beam to column)
 - b. Column splices
 - c. Stair stringers, handrails, and landings.
 6. Corrections or comments made on shop drawings during review do not relieve contractor from compliance with the requirements of the drawings and specifications. The review is only an examination of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for confirming and correlating all sizes, quantities, and dimensions; selecting fabrication and erection processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.
- B. Welder Performance Qualification Records (WPQR): Contractor shall submit WPQR for each shop and field welder, and for the Certified Welding Inspector to the Architect for review.
1. It is the Erector's responsibility to engage a qualified Certified Weld Inspector (CWI) if one is not employed internally.
- C. Welders' Certificates: Documentation certifying each welder and the Certified Welding Inspector employed on the work meets AWS qualifications.
- D. Manufacturer's Certificates: Submit certification that manufactured products (including bolts, nuts and washers) meet or exceed specified requirements. Manufactured products are to be delivered in unopened containers. Certification numbers must appear on product containers for bolts, nuts and washers and the numbers shall correspond to the identification numbers on the Manufacturer's Certificate. The Manufacturer's symbol and grade markings must appear on bolts, nuts and washers. Submit manufacturer's certification that structural shapes contain specified percentage recycled material.
- E. Product data: Submit certification that manufactured products meet or exceed specified requirements.
1. Weld filler material including filler metal Charpy V-Notch test values, electrodes, fluxes and shield gases.
 2. Prime paint.
 3. Welded studs.
 4. Cold-galvanizing compound for touch-up, as required.
- F. Mill Test Reports: Submit mill test reports indicating structural strength, destructive and nondestructive test analysis and chemical analyses from each heat of steel used in the work.

1.5 QUALITY ASSURANCE

- A. Fabricate structural steel members in accordance with AISC specifications.
- B. Welders shall be qualified in accordance with AWS D1.1 for each process, position and joint configuration.
- C. Maintain one copy of each referenced document on site.

- D. Survey anchor bolts for location and elevation prior to casting concrete.
- E. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-certified plant, category STD.
- F. Erector Qualifications: Company with a documented experience in performing the work of this Section and participates in the AISC Quality Certification program and is designated as AISC-certified erector, category CSE.
- G. The design of connections not detailed on the Drawings shall be under the direct supervision of a Professional Engineer experienced in design of this work and licensed in the State of Louisiana.

1.6 TESTS AND INSPECTIONS

- A. Welding Tests and Inspections
 - 1. All welds shall be visually inspected by an AWS Certified Weld Inspector in accordance with AWS D1.1 and in accordance with AWS B1.1 "Guide for Visual Examination of Welds"
 - 2. It is the Fabricator's responsibility to provide a CWI meeting the minimum requirements specified in AWS D1.1, Section 6.
 - 3. Additionally, 25% of full penetration welds shall be tested by ultrasonic testing in accordance with ASTM E164 and AWS D1.8
 - 4. Additionally, 100% of welds in moment connections shall be tested by ultrasonic testing in accordance with ASTM E164.
 - 5. Additionally, 100% of welds in column splice connections shall be tested by ultrasonic testing in accordance with ASTM E164.
- B. High-Strength Bolting Tests and Inspections
 - 1. All high strength bolts ASTM F3125 shall be manufactured, installed, and field tested in accordance with the "Specification for Structural Joints using High Strength Bolts" by RCSC, latest edition.
 - 2. It is the responsibility of the Erector to comply with the minimum requirements of the RCSC for visual inspections.

1.7 CONTRACTOR'S ENGINEERING SERVICES

- A. General: Where engineering services are required herein and excluded from EOR's contract, the Contractor shall retain a Professional Civil or Structural Engineer, referred to herein as the Contractor's Engineer. Documents prepared by the Contractor's Engineer shall be stamped and signed by a Professional Engineer licensed in the state where the project is located.
- B. The Fabricator shall be responsible for the design and adequacy of all connections that are not designed or fully detailed on the Contract Documents. Shop Drawings, depicting the configuration and fabrication details, along with calculations signed and sealed by a Registered Professional Engineer working for the Fabricator licensed to practice in the state in which the project is located, shall be submitted to the structural Engineer of Record for review. Delegated design connections include, but are not limited to, moment connections shown on plans and column splices as requested by Erector.

1. All beam to column moment connections shall be designed for the minimum service reaction indicated on plans in combination with a 10 kip axial force (acting in both tension and compression).
- C. Alternate connection details may be used if such details are submitted to the engineer for review and approval. However, the engineer shall be the sole judge of acceptance and the Contractor's bid shall anticipate the use of those details shown on the drawings. The Contractor is responsible for the design of such alternate details which they propose and provide stamped drawings for approval.
- D. All handrails shall be designed per IBC Chapter 16 including a 200 lb concentrated point load and, in public spaces, a 50 pound per linear foot line load. See Chapter 16 for all design requirements for handrails. Signed and sealed calculations by an Engineer licensed in the State where the project is located shall be provided by the Fabricator.
- E. All vehicle barriers shall be designed per IBC Chapter 16 including a 6000 lb concentrated point load. See Chapter 16 for all design requirements for vehicle barriers. Signed and sealed calculations by an Engineer licensed in the State where the project is located shall be provided by the Fabricator.

1.8 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on the Shop Drawings.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Structural Steel Members: A992 for rolled wide flange shapes and, for other rolled shapes and plate.
- B. Plate, bars and channels: ASTM A36 unless otherwise noted on the drawings. Plates 2 inch thick and greater shall have Charpy V-Notch toughness of 20 ft-lb at 70 degrees F tested at any location permitted by ASTM A673.
- C. Structural Tubing: ASTM A500, Grade B. Structural tubing shall be new and contain a minimum of 75 percent recycled post consumer steel.
- D. Pipe: ASTM A53, Type E or S, Grade B. Pipe shall be new and contain a minimum of 75 percent recycled post consumer steel and not more than 0.05 percent sulphur.
- E. Shear Stud Connectors: ASTM A108, Grades 1010 through 1020 inclusive. Connectors shall be free of defects, cracks or bursts deeper than half the thickness from the periphery of the head to the shaft. After welding, studs will be the length shown on the drawings.
- F. Threaded Stud Connectors: Threaded studs in structural steel connections shall be reduced base studs conforming to ASTM A108, Grades 1010 through 1020 inclusive. After welding, studs will be the length shown on the drawings.
- G. Bolts and Nuts: Bolts in structural steel connections shall be ASTM F3125 Grade A325, Type I unless designated as Grade A490 on the drawings. Nuts shall be ASTM A563 Grade C or DH. Patented, high strength steel connectors conforming to ASTM F1852 must be submitted for approval by the Architect and will not be permitted at slip critical bolted connections. Where galvanized connectors are called for on the drawings, they shall be galvanized in accordance with

ASTM A153. Bolts conforming ASTM A307 and nuts conforming to ASTM A563 may be used in stair, handrail, miscellaneous steel and timber connections.

- H. Washers shall be flat and either circular, square or rectangular conforming to ASTM F436 Type 1. The finish of washers is to match the nut. Grade A325 bolts shall have washers under the head and Grade A490 bolts shall have hardened washers under the head and the nut.
- I. Threaded Anchor Rods: ASTM F1554 36-ksi yield strength, unless otherwise designated on the drawings.
 - 1. Finish: Hot dip zinc coating.
 - 2. Grout: Nonmetallic, shrinkage resistant, non-corrosive, non-staining, factory-packaged complying with ASTM C1107.
- J. Welding Materials: Filler metals shall conform to Table 4.1 of AWS D1.1. Electrodes and equipment settings shall be as recommended by the filler metal manufacturer for the position, thickness and conditions of use. electrodes and filler metal shall be low hydrogen types. FCAW wire diameter shall not exceed the values in Section 4.14.1 of AWS D1.1.
- K. Sliding Bearing Plates: Teflon coated.
- L. Touch-up Primer for Galvanized Surfaces: Zinc rich type.

2.2 CONNECTIONS

- A. Unless otherwise noted on the drawings, shop connections shall be welded and field connections, except moment connections, shall be bolted. Weld only in accordance with approved welding procedures.
- B. Unless otherwise noted on the drawings, every weld shall develop the full strength of the lesser of the members it joins.
- C. All butt, groove, or bevel welds shall be complete, full penetration.
- D. Welding electrodes shall be E70XX for manual arc welding and F7X-EXXX for submerged arc welding.
- E. Minimum weld size shall be 3/16" unless noted otherwise.
- F. Unless otherwise noted on the drawings, bolted connections shall be 3/4-inch diameter F3125 Grade A325; connections shall have a minimum of two bolts. Shoulder bolts with hex nut and lock washers shall be used in slotted connections with the washer covering the slot in positions. Bolts shall be assumed snug-tightened unless noted otherwise.
- G. Oversize holes shall not be allowed without approval of the EOR. If oversize holes are elected and approved, bolts shall be slip-critical.
- H. Unless connections are detailed on the drawings, the Contractor is responsible for the design of connections and shall submit stamped Shop Drawings, by an Engineer licensed in Louisiana, for review.
- I. All elements of a connection shall be designed to resist the loads and moments shown on the drawings; if the reaction or load is not shown on the drawings, connections are to be designed as follows:

1. Beam connections are to be designed to resist one half the allowable load for the appropriate span given in the Tables 3-6 through 3-9 in the AISC Manual of Steel Construction. Beam connections will be in accordance with the AISC Manual of Steel Construction. The minimum connection angle length will be half the depth of the beam depth.
 2. Horizontal and vertical bracing connections shall have a minimum of two bolts.
- J. All connections shall be symmetrical about the axis of the member connected. Provide only one grade of bolt for each bolt diameter to be used in the connections. Do not mix grades of bolts.
- K. Gusset plates connecting horizontal and vertical bracing to beams and/or columns shall be connected to both adjacent members; where this is not practical, provision shall be made for the moment induced by the eccentricity of the load to the work point of the connection. Gusset plates for horizontal bracing shall be located within the top two rows of bolts of beam connection angles, unless otherwise noted on the drawings. The minimum thickness of gusset plates in single shear shall be 5/16-inch for bolts in single shear and 3/8-inch for bolts in double shear.
- L. Oversize holes for anchor bolts may be used with field welded washer plates. Anchor bolts for each column shall be furnished with a 1/8 thick sheet metal template.
- M. Dissimilar metals shall be treated or properly separated to prevent galvanic and/or corrosive effects.
- N. Where possible, all bolt holes in structural steel shall be drilled or punched in the shop. Any holes required to be made at the project site shall be mechanically drilled or punched. No burning of holes shall be allowed.

2.3 FABRICATION

- A. Fabricate structural steel in accordance with the applicable provisions of the AISC Specifications for Structural Steel Buildings. Where practical, fabricate and assemble in the shop.
- B. Obtain field measurements necessary for steel fabrication.
- C. Perform high strength shop bolting in accordance with the appropriate ASTM specification. Complete high strength shop bolting before welding.
- D. Dimensional tolerances:
- E. Overall length of members with both ends milled may vary by 1/32-inch.
- F. Overall length of members without milled ends may vary by 1/16-inch for lengths less than 30 feet and 1/8-inch for lengths 30 feet and over.
- G. Where structural joints are welded, the detail of the joints, welding technique, weld quality and appearance, and methods for correcting defective welds shall conform to the AISC Code of Standard Practice and AWS D1.1. Welding procedure and sequence shall conform to AWS B2.1. Surfaces to be welded shall be clean and free of rust, paint, or galvanizing. Burned or flame cut edges shall be chipped clean and wire brushed.
- H. Where milling is indicated on the drawings, the contact surfaces shall be machined true to obtain full and complete contact.

- I. Structural members are selected from generally available rolled sections; however, if the specified sections are not available, the Contractor shall provide sections with equivalent physical properties after approval by and at no additional cost to the Architect.
- J. Shear studs shall not be installed in the shop.
- K. All steel shall be painted with shop standard primer unless noted otherwise.
- L. Splices in structural steel not shown on the structural drawings will not be accepted without specific approval of the Structural Engineer. Submitted splices shall be designed the Fabricator's delegated design engineer and stamped by an Engineer licensed in Louisiana.
- M. The General Contractor and Steel Erector shall notify the Architect of any fabrication or erection errors or deviations and receive written approval before any field corrections are made.

2.4 FINISH

- A. Shop prime structural steel members unless noted otherwise. Apply two coats of different colored primer to areas which will be inaccessible after erection or assembly. Do not prime surfaces that will be fireproofed, galvanized, fully embedded in concrete or mortar, within 3 inches of field welds, or on the faying surface of high strength bolted friction connections.
 - 1. Lead and chromate free, non-asphaltic, rust-inhibiting primer complying w/ MPI #79 and compatible w/ any top coat.
 - 2. SSPC-SP2 surface preparation or better.
 - 3. Extend briming of partially embedded member minimum 2in.
- B. Galvanize structural steel members indicated on the Drawings as galvanized in accordance with ASTM A123 and A385 after fabrication. Prepare galvanized surfaces to be painted in accordance with ASTM D2092 and shop coat with a compatible primer. Repair damaged galvanizing in accordance with ASTM A780.
- C. High Performance Coatings - All exposed or visible structural steel not designated to be galvanized shall receive one or more coats of paint after fabrication in accordance with all requirements of the Steel Structures Painting Council's requirements for Zone 1A for interior steel or Zone 1B for exterior steel. All such paints shall be compatible with the finish coat as specified in Division 9.

2.5 PREPARATION

- A. Provide anchor bolts and other items embedded in concrete.
- B. Furnish and install temporary supports and internal braces necessary to support structural steel during erection. Temporary supports and braces shall be adequate for anticipated wind, seismic, equipment and erection loads. Remove temporary shoring after the steel erection is complete.
- C. After completion of welds, remove weld tabs (spillage dams) in accordance with AWS D1.1 provision for dynamically loaded structures. After completion of full penetration groove welds, remove backing bars in accordance with AWS D1.1 provision for dynamically loaded structures, inspect the weld and reinforce the groove weld with a fillet weld. Peening of thick welds shall be performed in accordance with AWS D1.1.

2.6 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Beginning of installation means Contractor accepts that existing conditions meet the requirements for installation.
- C. The General Contractor and/or Steel Erector shall notify the Architect of any fabrication or erection errors or deviations and receive written approval before any field corrections are made.

2.7 ERECTION

- A. Erect structural steel in accordance with the AISC Specifications for Structural Steel Buildings, except as modified herein. Where members cannot be properly assembled due to mis-fabrication or deformation due to handling or transportation, the condition shall be reported to the Architect with a proposed method of correction for approval.
- B. During erection beams and vertical bracing are to be secured with at least two bolts prior to releasing the hoisting cable.
- C. Allow for erection loads, and provide sufficient temporary bracing to maintain structure in safe condition, plumb, and in true alignment until completion of erection and installation of permanent bracing.
- D. Perform high strength bolting in accordance with the appropriate ASTM specification. Complete high strength bolting before field welding.
- E. Do not field cut or alter structural members without approval of the Architect.
- F. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.
- G. Grout base plates with non-shrink grout. Clean concrete bearing surfaces from bond-reducing materials, and roughen if necessary to improve bond to surfaces. Clean the bottom surface of base plate. Set base plate on wedges or other adjustable devices. After the base plate has been positioned and plumbed, tighten the anchor bolts. Pack grout solidly between the bearing surfaces to ensure that no voids remain complying with manufacturer's instructions for non-shrink grout. Trowel grouted surfaces smooth, splaying neatly to 45 degrees.
- H. Where field welding to existing structural members is required, the Contractor shall confirm the weldability of the existing steel by cutting or drilling samples and having them tested by the Contractor's Independent Testing Laboratory. The testing laboratory shall recommend the location for taking samples, provide a report on weldability, recommend the type of electrode and weld and inspect the final welds. The Contractor will be responsible for preparing the existing steel for welding and touch of the surfaces. Use low hydrogen electrodes when welding to existing steel.
- I. Existing framing requiring welding shall be thoroughly cleaned to ensure proper welding.
- J. Provide temporary shoring when welding to existing steel.
- K. Use low-hydrogen electrodes when welding to existing steel.

- L. Field welded surfaces within 4 inches of weld shall be cleaned and ground smooth. After welding, coat the exposed area with appropriate primer/paints as specified.
- M. Spandrels and columns adjacent to masonry shall have adjustable masonry ties.
- N. Main support members for the metal deck are shown. During preparation, submission, and review of shop drawings, any additional angles or miscellaneous attachment details required to support the metal deck at the required elevation shall be provided by the Structural Steel Contractor.
- O. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1/D1.1M and manufacturer's written instructions.
- P. Structural elements shall be fabricated and assembled in the shop to the greatest extent possible. All field connections shall be bolted unless shown otherwise on the structural drawings.
- Q. No flame cutting or enlarging will be allowed without specific approval of the Structural Engineer.

2.8 ERECTION TOLERANCES

- A. Tolerances shall be in accordance with the AISC Code of Standard Practice. Crane rail tolerances shall comply with CMAA Specification 70.

END OF SECTION 051200

SECTION 051213 - ARCHITECTURALLY EXPOSED STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary General Conditions and Division 01 Specifications Sections apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Architecturally exposed structural steel (AESS).
 - 2. Section 051200 "Structural Steel Framing" requirements that also apply to AESS.

1.3 DEFINITIONS

- A. AESS: Architecturally exposed structural steel.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

- A. Shop Drawings: Show fabrication of AESS components. Shop Drawings for structural steel may be used for AESS.
 - 1. Identify AESS category for each steel member and connection, including transitions between AESS categories and between AESS and non-AESS.
- B. Samples: Submit Samples to set quality standards for AESS.
 - 1. Two steel plates, 3/8 by 8 by 4 inches, with long edges joined by a groove weld and with weld ground smooth.
 - 2. Steel plate, 3/8 by 8 by 8 inches, with one end of a short length of rectangular steel tube, 4 by 6 by 3/8 inches, welded to plate with a continuous fillet weld and with weld ground smooth and blended.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category BU, or is accredited by the IAS Fabricator Inspection Program for Structural Steel (AC 172) and is experienced in fabricating AESS similar to that indicated on this Project.
- B. Installer Qualifications: A qualified Installer who participates in the AISC Quality Certification Program, is designated an AISC-Certified Erector, Category ACSE on this Project.
- C. Shop-Painting Applicators: Qualified according to AISC's Sophisticated Paint Endorsement P1 or SSPC-QP 3.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Use special care in handling AESS to prevent twisting, warping, nicking, and other damage during fabrication, delivery, and erection. Store materials to permit easy access for inspection and identification. Keep AESS members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect AESS members and packaged materials from corrosion and deterioration.
 - 1. Do not store AESS materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.8 FIELD CONDITIONS

- A. Field Measurements: Where AESS is indicated to fit against other construction, verify actual dimensions by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Comply with requirements of ANSI/AISC 303, Sections 1 through 9 and as modified in Section 10, "Architecturally Exposed Structural Steel."

2.2 FILLER

- A. Polyester filler intended for use in repairing dents in automobile bodies.

2.3 PRIMER

- A. Steel Primer:
 - 1. Comply with Section 099113 "Exterior Painting" and Section 099123 "Interior Painting." Section 099600 "High-Performance Coatings." Section 099113 "Exterior Painting," Section 099123 "Interior Painting," and Section 099600 "High-Performance Coatings."

- B. Galvanized-Steel Primer: MPI#26 MPI#80 MPI#134.
 - 1. Etching Cleaner: MPI#25, for galvanized steel.
 - 2. Galvanizing Repair Paint: MPI#18, MPI#19, or SSPC-Paint 20 ASTM A780/A780M.

2.4 FABRICATION

- A. Shop fabricate and assemble AESS to the maximum extent possible. Locate field joints at concealed locations if possible. Detail assemblies to minimize handling and to expedite erection.
 - 1. Use special care handling and fabricating AESS before and after shop painting to minimize damage to shop finish.
- B. Category AESS 1:
 - 1. Comply with overall profile dimensions of AWS D1.1/D1.1M for welded built-up members. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
 - 2. Prepare surfaces according to Part 2 "Shop Priming" Article and SSPC-SP 6 (WAB)/NACE WAB-3.
 - 3. Grind sheared, punched, and flame-cut edges to remove burrs and provide smooth surfaces and eased edges.
 - 4. Make intermittent welds appear continuous, using filler or additional welding.
 - 5. Seal weld open ends of hollow structural sections with 3/8-inch closure plates.
 - 6. Limit butt and plug weld projections to 1/16 inch.
 - 7. Install bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
 - 8. Remove weld spatter, slivers, and similar surface discontinuities.
 - 9. Remove blemishes and surface irregularities resulting from temporary braces or fixtures by filling or grinding, before cleaning, treating, and shop priming.
 - 10. Grind tack welds smooth unless incorporated into final welds.
 - 11. Remove backing and runoff tabs, and grind welds smooth.
 - 12. Fabricate AESS to the tolerances as set forth by Level 3.
- C. Cleaning Corrosion-Resisting (Weathering) AESS: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 6 (WAB)/NACE WAB-3.

2.5 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A123/A123M.
 - 1. Do not quench or apply post-galvanizing treatments that might interfere with paint adhesion.
 - 2. Fill vent and drain holes that are exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

2.6 SHOP PRIMING

- A. Shop prime steel surfaces, except the following:

1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
 2. Surfaces to be field welded.
 3. Surfaces to be high-strength bolted with slip-critical connections.
 4. Corrosion-resisting (weathering) steel surfaces.
 5. Galvanized surfaces.
- B. Surface Preparation: Clean nongalvanized surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:
1. SSPC-SP 7 (WAB)/NACE WAB-4.
 2. SSPC-SP 14 (WAB)/NACE WAB-8.
 3. SSPC-SP 11.
 4. SSPC-SP 6 (WAB)/NACE WAB-3.
 5. SSPC-SP 10 (WAB)/NACE WAB-2.
 6. SSPC-SP 5 (WAB)/NACE WAB-1.
- C. Preparing Galvanized Steel for Shop Priming: After galvanizing, thoroughly clean steel of grease, dirt, oil, flux, and other foreign matter, and treat with etching cleaner.
- D. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify, with steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
- B. Examine AESS for twists, kinks, warping, gouges, and other imperfections before erecting.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep AESS secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

3.3 ERECTION

- A. Take special care during erection to avoid marking or distorting the AESS and to minimize damage to shop painting. Set AESS accurately in locations and to elevations indicated and according to ANSI/AISC 303 and ANSI/AISC 360.

1. Remove welded tabs that were used for attaching temporary bracing and safety cabling and that are exposed to view in the completed Work. Take care to avoid any blemishes, holes, or unsightly surfaces resulting from the use or removal of temporary elements.
2. Grind tack welds smooth.
3. Remove backing and runoff tabs, and grind welds smooth.
4. Orient bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
5. Remove erection bolts in Category AESS 4 AESS, fill holes with weld metal or filler, and grind or sand smooth to achieve surface quality approved by Architect.
6. Fill weld access holes in Category AESS 4 AESS with weld metal or filler and grind, or sand smooth to achieve surface quality as approved by Architect.
7. Conceal fabrication and erection markings from view in the completed structure.

3.4 REPAIR

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas, and touchup galvanizing to comply with ASTM A780/A780M.

3.5 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to inspect AESS as specified in Section 051200 "Structural Steel Framing." The testing agency is not responsible for enforcing requirements relating to aesthetic effect.
- B. Architect will observe AESS in place to determine acceptability relating to aesthetic effect.

END OF SECTION

SECTION 06 10 63 - EXTERIOR ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Wood fences.
 - 2. Wood.

1.2 ACTION SUBMITTALS

- A. Product Data: For preservative-treated wood products.

1.3 INFORMATIONAL SUBMITTALS

- A. Material Certificates:
 - 1. For preservative-treated wood products. Indicate type of preservative used and net amount of preservative retained.
- B. Evaluation Reports: For preservative-treated wood products, from ICC-ES.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

- A. Comply with DOC PS 20 and with grading rules of lumber grading agencies certified by ALSC's Board of Review as applicable. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by ALSC's Board of Review.
 - 1. Factory mark each item with grade stamp of grading agency.
 - 2. For items that are exposed to view in the completed Work, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
 - 3. Provide dressed lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content:
 - 1. Boards: 19 percent.
 - 2. Dimension Lumber: 19 percent for 2-inch nominal thickness or less; no limit for more than 2-inch nominal thickness.
 - 3. Timber: 19 percent.

2.2 LUMBER

- A. Dimension Lumber: No. 1 grade and any of the following species:
 - 1. Mixed southern pine; SPIB.
- B. Boards: Any of the following species and grades:
 - 1. Redwood, Heart B or Select Heart; RIS.
 - 2. Western red cedar, Grade A; NLGA, WCLIB, or WWPA.

2.3 POSTS

- A. Dimension Lumber Posts: No. 2 grade and the following species:
 - 1. Mixed southern pine; SPIB.

2.4 PRESERVATIVE TREATMENT

- A. Pressure treat boards and dimension lumber with waterborne preservative according to AWP A U1; Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.
- B. Pressure treat timber with waterborne preservative according to AWP A U1; Use Category UC4a.
 - 1. Treatment with CCA shall include post-treatment fixation process.
- C. Preservative Chemicals: Acceptable to authorities having jurisdiction.
 - 1. Do not use chemicals containing arsenic or chromium.
- D. After treatment, redry boards dimension lumber to 19 percent maximum moisture content.
- E. Mark treated wood with treatment quality mark of an inspection agency approved by ALSC's Board of Review.
 - 1. For items indicated to receive a stained or natural finish, mark each piece on surface that will not be exposed or omit marking and provide certificates of treatment compliance issued by inspection agency.
- F. Application: Treat all wood unless otherwise indicated.

2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated, acceptable to authorities having jurisdiction, and that comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.
 - 1. Use stainless steel or fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or ASTM F 2329 unless otherwise indicated.

2. For pressure-preservative-treated wood, use stainless-steel fasteners.
- B. Postinstalled Anchors: Stainless-steel, chemical anchors with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing according to ASTM E 488, conducted by a qualified independent testing and inspecting agency.
1. Stainless-steel bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

2.6 METAL ACCESSORIES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Cleveland Steel Specialty Co.
 2. KC Metals Products, Inc.
 3. Phoenix Metal Products, Inc.
 4. R. H. Tamlyn & Sons LP.
 5. Simpson Strong-Tie Co., Inc.
 6. USP Structural Connectors.
- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G90 coating designation.
- C. Stainless-Steel Sheet: ASTM A 666, Type 304.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit work to other construction; scribe and cope as needed for accurate fit.
- B. Framing Standard: Comply with AF&PA WCD1 unless otherwise indicated.
- C. Install metal framing anchors to comply with manufacturer's written instructions.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Apply copper naphthenate field treatment to comply with AWWA M4, to cut surfaces of preservative-treated lumber.
- F. Securely attach exterior rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
1. ICC-ES AC70 for power-driven fasteners.
 2. "Fastening Schedule" in ICC's International Building Code.
 3. "Fastener Schedule for Structural Members" and "Alternate Attachments" in ICC's International Residential Code for One- and Two-Family Dwellings.

END OF SECTION 06 10 63

SECTION 09 93 00 - STAINING AND TRANSPARENT FINISHING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and application of wood stains and transparent finishes.

1.2 DEFINITIONS

- A. MPI Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- C. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- D. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- E. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
- B. Samples: For each type of finish system and in each color and gloss of finish required.

1.4 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each finish system indicated and each color selected to verify preliminary selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
 - 1. Architect will select one surface to represent surfaces and conditions for application of each type of finish system and substrate.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft..
 - b. Other Items: Architect will designate items or areas required.
 - 2. Final approval of stain color selections will be based on mockups.
 - a. If preliminary stain color selections are not approved, apply additional mockups of additional stain colors selected by Architect at no added cost to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Behr Process Corporation.
 - 2. Benjamin Moore & Co.
 - 3. Coronado Paint; Benjamin Moore Company.
 - 4. Sherwin-Williams Company (The).
- B. Products: Subject to compliance with requirements, provide one of the products listed in wood finish systems schedules for the product category indicated.

2.2 MATERIALS, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products List."
- B. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, products shall be recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- C. Stain Colors: As selected by Architect from manufacturer's full range.

2.3 CONCRETE STAIN SYSTEM (WATER-BASED)

- A. First Coat: Low-luster opaque finish matching topcoat.
- B. Topcoat: Low-luster opaque finish:
 - 1. S-W H&C Colortop Water-Based Solid Color Concrete Stain, at 50 to 250 sq. ft. gal.(1.23 to 6.14 sq. M per liter).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Interior Wood Substrates: 13 percent, when measured with an electronic moisture meter.

- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Proceed with finish application only after unsatisfactory conditions have been corrected.
 - 1. Beginning finish application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and finishing.
 - 1. After completing finishing operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean and prepare surfaces to be finished according to manufacturer's written instructions for each substrate condition and as specified.
 - 1. Remove dust, dirt, oil, and grease by washing with a detergent solution; rinse thoroughly with clean water and allow to dry. Remove grade stamps and pencil marks by sanding lightly. Remove loose wood fibers by brushing.
 - 2. Remove mildew by scrubbing with a commercial wash formulated for mildew removal and as recommended by stain manufacturer.

3.3 APPLICATION

- A. Apply finishes according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
- B. Apply finishes to produce surface films without cloudiness, holidays, lap marks, brush marks, runs, ropiness, or other surface imperfections.

3.4 CLEANING AND PROTECTION

- A. Protect work of other trades against damage from finish application. Correct damage by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- B. At completion of construction activities of other trades, touch up and restore damaged or defaced finished wood surfaces.

3.5 INTERIOR WOOD -FINISH-SYSTEM SCHEDULE

- A. Wood Substrates: Wood trim, architectural woodwork, and doors.
 - 1. Semitransparent Stain System MPI INT 6.3C:

- a. Prime Coat: Stain, exterior, solvent based, semitransparent, matching topcoat.
- b. Topcoat: Stain, exterior, solvent based, semitransparent, MPI #13.

END OF SECTION 09 93 00

SECTION 09 96 00 - HIGH-PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes surface preparation and field application of high-performance coating systems to exterior exposed structural and miscellaneous steel framing.
- B. Related Sections include the following:
 - 1. Division 5 Section "Structural Steel".

1.2 DEFINITIONS

- A. Standard coating terms defined in ASTM D 16 apply to this Section.
- B. Environments: The following terms are used in Part 2 of this Section to distinguish between different corrosive exposures:
 - 1. "Moderate environments" are corrosive industrial atmospheres with intermittent exposure to high humidity and condensation, occasional mold and mildew development, and regular cleaning with strong chemicals. Environments with exposure to heavy concentrations of chemical fumes and occasional splashing and spilling of chemical products are moderate environments.

1.3 SUBMITTALS

- A. Product Data: For each coating system indicated. Include primers.
 - 1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference the specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
 - 2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each material specified.
- B. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated.
- C. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Engage an experienced applicator who has completed high-performance coating system applications similar in material and extent to those indicated for Project and whose work has a record of successful in-service performance.

- B. Source Limitations: Obtain primers and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label with the following information:
 - 1. Name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.
 - 7. Color name and number.
 - 8. Handling instructions and precautions.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain containers used in storage in a clean condition, free of foreign materials and residue.
 - 1. Protect materials from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and applying coatings.

1.6 PROJECT CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 45 and 95 deg F (7 and 35 deg C).
- B. Do not apply coatings in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.
 - 1. Allow wet surfaces to dry thoroughly and attain temperature and conditions specified before proceeding with or continuing coating operation.
 - 2. Work may continue during inclement weather only if areas and surfaces to be coated are enclosed and temperature within the area can be maintained within limits specified by manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products indicated in the coating system descriptions.
- B. Manufacturers' Names: The following manufacturers are referred to in the coating system descriptions by shortened versions of their names shown in parenthesis:
 - 1. ICI Dulux Paints; Devoe Coatings (ICI).

2. Moore: Benjamin Moore & Co. (Moore).
3. Rust-Oleum Corporation (R-O).
4. Tnemec Company, Inc. (Tnemec).
5. Sherwin Williams Company

2.2 COATINGS MATERIALS, GENERAL

A. Material Compatibility: Provide primers, undercoats, and finish-coat materials that are compatible with one another and substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Material Quality: Provide manufacturer's highest grade of the various high-performance coatings specified. Materials not displaying manufacturer's product identification are not acceptable.

2.3 EXTERIOR HIGH-PERFORMANCE COATING SYSTEMS

A. Galvanized Metal: Provide the following finish systems over exterior galvanized metal surfaces:

1. Locations: Generally, but not necessarily limited to:
 - a. All components of exterior galvanized steel framing system.
 - b. All components of exterior galvanized railings.
 - c. Miscellaneous exterior metals.
2. Coating System: Two coats with UV blocker in finish coat.
 - a. First Coat: Acrylic Metal Primer applied at spreading rate indicated.
 - 1) Benjamin Moore & Co.: M04 Acrylic Metal Primer, 2.0 – 3.0 dry mils.
 - b. Second Coat: Aliphatic acrylic polyurethane enamel, with UV Blocker added to second coat, applied at spreading rate indicated.
 - 1) Benjamin Moore & Co.: M74/M75 Aliphatic Acrylic Urethane Gloss, 2.0 to 2.5 dry mils.
3. Coating System: Two coats with UV blocker in finish coat.
 - a. First Coat: Polyamidoamine Epoxy primer applied at spreading rate indicated.
 - 1) Tnemec: Series 66 Hi-Build Epoxoline, 2.0 – 3.0 dry mils, as the basis of design.
 - b. Second Coat: Aliphatic acrylic polyurethane enamel, with Series 44-600 UV Blocker added to second coat, applied at spreading rate indicated.
 - 1) Tnemec: Series 1074/1075, 2.5 to 3.0 dry mils, as the basis of design.

2.4 COLORS

A. Colors: To be selected by the Architect from manufacturers standards with Tnemec color charts as a minimum selection...

PART 3 - EXECUTION

3.1 EXAMINATION

A. With Applicator present, examine substrates and conditions under which high-performance coatings will be applied, for compliance with coating application requirements.

1. Apply coatings only after unsatisfactory conditions have been corrected and surfaces to receive coatings are thoroughly dry.
2. Start of application is construed as Applicator's acceptance of surfaces within that particular area.

B. Coordination of Work: Review other Sections in which primers or other coatings are provided to ensure compatibility of total systems for various substrates. On request, furnish information on characteristics of specified finish materials to ensure compatible primers.

1. If a potential incompatibility of primers applied by others exists, obtain the following from the primer Applicator before proceeding:
 - a. Confirmation of primer's suitability for expected service conditions.
 - b. Confirmation of primer's ability to be top coated with materials specified.
2. Notify Architect about anticipated problems before using the coatings specified over substrates primed by others.

3.2 PREPARATION

A. General: Remove plates, machined surfaces, and similar items already in place that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating.

1. After completing coating operations, reinstall items that were removed; use workers skilled in the trades involved.

B. Cleaning: Before applying high-performance coatings, clean substrates of substances that could impair bond of coatings. Remove oil and grease before cleaning.

1. Schedule cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet, newly coated surfaces.

C. Surface Preparation: Clean and prepare surfaces to be coated according to manufacturer's written instructions for each substrate condition and as specified.

1. Provide barrier coats over incompatible primers or remove primers and re-prime substrate.
2. Galvanized-Metal Substrates: Clean galvanized metal surfaces that have not been shop coated; remove oil, grease, and all other soluble surface contaminants in accordance with SSPC-SP1. Hand Tool Clean/Power Tool to remove all insoluble surface contaminants. Treat all surfaces to be coated with Oakite 747 LTS in accordance with manufacturer's written recommendations.
 - a. Touch up bare areas and shop-applied prime coats that have been damaged. Wire brush, solvent clean, and touch up with same primer as the shop coat.

D. Material Preparation: Carefully mix and prepare coating materials according to manufacturer's written instructions.

1. Maintain containers used in mixing and applying coatings in a clean condition, free of foreign materials and residue.
2. Stir materials before applying to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into the material. Remove film and, if necessary, strain coating material before using.
3. Use only the type of thinners approved by manufacturer and only within recommended limits.

E. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of finish coat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

A. General: Apply high-performance coatings according to manufacturer's written instructions.

1. Use applicators and techniques best suited for the material being applied.
2. Do not apply high-performance coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film.
3. Coating colors, surface treatments, and finishes are indicated in the coating system descriptions.
4. Provide finish coats compatible with primers used.

B. Scheduling Coating: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for coating as soon as practicable after preparation and before subsequent surface deterioration.

1. The number of coats and film thickness required is the same regardless of application method.
 - a. Omit primer on metal surfaces that have been shop primed and touchup painted.
 - b. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer.
 - c. Where manufacturer's written instructions require sanding, sand between applications to produce a smooth, even surface.
 - d. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until coating has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat does not cause undercoat to lift or lose adhesion.
2. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance. Give special attention to edges, corners, crevices, welds, exposed fasteners, and similar surfaces to ensure that they receive a dry film thickness equivalent to that of flat surfaces.

c. Application Procedures: Apply coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brush Application: Use brushes best suited for material applied and of appropriate size for the surface or item being coated.

- a. Apply primers and first coats by brush unless manufacturer's written instructions permit using roller or mechanical applicators.
 - b. Brush out and work brush coats into surfaces in an even film.
 - c. Eliminate cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Neatly draw glass lines and color breaks.
2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by manufacturer for the material and texture required.
3. Spray Equipment: Use mechanical methods to apply coating if permitted by manufacturer's written instructions and governing regulations.
 - a. Use spray equipment with orifice size recommended by manufacturer for material and texture required.
 - b. Apply each coat to provide the equivalent hiding of brush-applied coats.
 - c. Do not double back with spray equipment building-up film thickness of two coats in one pass, unless recommended by manufacturer.
- D. Minimum Coating Thickness: Apply each material no thinner than manufacturers recommended spreading rate. Provide total dry film thickness of the entire system as recommended by manufacturer.
- E. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by manufacturer, to material required to be coated or finished that has not been prime coated.
 1. Recoat primed and sealed substrates if there is evidence of suction spots or unsealed areas in first coat, to ensure a finish coat with no burn-through or other defects caused by insufficient sealing.
- F. Completed Work: Match approved Samples for color, texture, and coverage. Remove, refinish, or recoat work that does not comply with specified requirements.

3.4 CLEANING

A. Cleanup: At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

1. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

3.5 PROTECTION

A. Protect work of other trades, whether being coated or not, against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.

1. Provide "Wet Paint" signs to protect newly coated finishes. After completing coating operations, remove temporary protective wrappings provided by others to protect their work.
2. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces. Comply with procedures specified in PDCA P1.

END OF SECTION 09 96 00

SECTION 101419 - DIMENSIONAL LETTER SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Dimensional characters.
 - a. Cutout dimensional characters.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For signs.
 - 1. Include fabrication and installation details and attachments to other work.
 - 2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
 - 3. Show message list, typestyles, graphic elements, and layout for each sign at least half size.
 - 4. Show locations of electrical service connections.
 - 5. Include diagrams for power, signal, and control wiring.
- C. Samples: For each exposed product and for each color and texture specified.
- D. Delegated Design Submittal: For signs indicated in "Performance Requirements" Article .
 - 1. Include structural analysis calculations for signs indicated to comply with design loads; signed and sealed by the qualified professional engineer responsible for their preparation.

1.3 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.4 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design sign structure and anchorage of dimensional character sign according to structural performance requirements.
- B. Structural Performance: Signs and supporting elements shall withstand the effects of gravity and other loads within limits and under conditions indicated.
- C. Thermal Movements: For exterior fabricated channel dimensional characters, allow for thermal movements from ambient and surface temperature changes.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 DIMENSIONAL CHARACTERS

- A. Cutout Characters Privateer Beach: Characters with uniform faces; square-cut, smooth, eased edges; precisely formed lines and profiles; and as follows:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. A.R.K. Ramos.
 - b. ACE Sign Systems, Inc.
 - c. ASI Sign Systems, Inc.
 - d. Southwell Company (The).
 - e. Prior Approved Equal.
 - 2. Character Material: Plate aluminum.
 - 3. Character Height: As indicated on Drawings.
 - 4. Thickness: As indicated on Drawings Manufacturer's.
 - 5. Finishes:
 - a. Integral Metal Finish: As selected by Architect from full range of industry finishes.
 - 6. Mounting: As indicated on Drawings Concealed studs Projecting studs Rosette-head through fasteners Countersunk flathead through fasteners Concealed, painted aluminum back bar or bracket assembly Concealed, stainless steel back bar or bracket assembly Adhesive Insert requirement.

2.3 ACCESSORIES

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following:
 - 1. Use concealed fasteners and anchors unless indicated to be exposed.

2. For exterior exposure, furnish nonferrous-metal stainless steel hot-dip galvanized Insert requirement devices unless otherwise indicated.
 3. Exposed Metal-Fastener Components, General:
 - a. Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.
 4. Sign Mounting Fasteners:
 - a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.
- B. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

2.4 FABRICATION

- A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.
1. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
 2. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
 3. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
 4. Internally brace dimensional characters for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners.
 5. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.
 6. Castings: Fabricate castings free of warp, cracks, blowholes, pits, scale, sand holes, and other defects that impair appearance or strength. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks before finishing.
- B. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.

PART 3 - EXECUTION

3.1 INSTALLATION OF DIMENSIONAL CHARACTERS

- A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.
1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
 2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.

3. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

B. Mounting Methods:

1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.
 - a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.
 - b. Thin or Hollow Surfaces: Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.
2. Projecting Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.
 - a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place spacers on studs, place sign in position, and push until spacers are pinched between sign and substrate, embedding the stud ends in holes. Temporarily support sign in position until adhesive fully sets.
 - b. Thin or Hollow Surfaces: Place spacers on studs, place sign in position with spacers pinched between sign and substrate, and install washers and nuts on stud ends projecting through opposite side of surface, and tighten.
3. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.
4. Back Bar and Brackets: Remove loose debris from substrate surface and install backbar or bracket supports in position, so that signage is correctly located and aligned.
5. Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.

C. Remove temporary protective coverings and strippable films as signs are installed.

END OF SECTION

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Clearing and removal of vegetation.
- B. Removal of existing debris.

1.2 RELATED REQUIREMENTS

- A. Section 011000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 015000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- C. Section 017000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products.
- D. Section 312200 - Grading: Topsoil removal.
- E. Section 312200 - Grading: Fill material for filling holes, pits, and excavations generated as a result of removal operations.
- F. Section 312323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.
- G. Section 329300 - Plants: Relocation of existing trees, shrubs, and other plants.

1.3 REFERENCE STANDARDS

1.4 SUBMITTALS

- A. See Section 013100 - Administrative Requirements, for submittal procedures.
- B. Site Plan: Showing:
 - 1. Areas for temporary construction and field offices.

1.5 QUALITY ASSURANCE

- A. Clearing Firm: Company specializing in the type of work required. A minimum of 5 years of experience is required.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fill Material: As specified in Section 312200 - Grading

PART 3 - EXECUTION

3.1 SITE CLEARING

- A. Comply with other requirements specified in Section 017000.
- B. Minimize production of dust due to clearing operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

3.2 EXISTING UTILITIES AND BUILT ELEMENTS

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Protect existing structures and other elements that are not to be removed.

3.3 VEGETATION

- A. Scope: Remove trees, shrubs, brush, and stumps in areas to be covered by building structure, paving, lawns, and planting beds.

END OF SECTION

SECTION 312000 – EARTHWORK

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Excavation, filling, compacting and grading operations both inside and outside building limits as required for below-grade improvements and to achieve grades and elevations indicated. Provide trenching and backfill for mechanical and electrical work and utilities.
- B. Subbase materials, drainage fill, common fill, and structural fill materials for slabs, pavements, and improvements.
- C. Suitable fill from off-site if on-site quantities are insufficient or unacceptable, and legal disposal of excess fill off-site.
- D. Rock excavation without blasting unless blasting is specifically authorized.

1.2 RELATED SECTIONS

- A. Section 015639 – Tree Protection and Trimming

1.3 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Test Reports: Submit for approval test reports, list of materials and gradations proposed for use.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum 2-year experience installing similar products.

1.5 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.8 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Substitutions: Not permitted.
- B. Requests for substitutions will be considered in accordance with provisions in project manual.

2.2 MATERIALS

- A. Earthwork:
 - 1. Subbase Material: Graded gravel or crushed stone.
 - 2. Bedding Course: Graded crushed gravel and sand.
 - 3. Borrow Soil: Off-site soil for fill or backfill.
 - 4. Drainage Fill: ashed gravel or crushed stone.
 - 5. Common Fill: Mineral soil free from unsuitable materials.
 - 6. Structural Fill: Graded gravel.
 - 7. Impervious Fill: Gravel and sand mixture.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.2 INSTALLATION

- A. Excavation is unclassified and includes excavation to subgrade regardless of materials encountered. Repair excavations beyond elevations and dimensions indicated as follows:
 - 1. At Structure: Concrete or compacted structural fill.
 - 2. Elsewhere: Backfill and compact as directed.
- B. Maintain stability of excavations; coordinate shoring and bracing as required by authorities having jurisdiction. Prevent surface and subsurface water from accumulating in excavations. Stockpile satisfactory materials for reuse, allow for proper drainage and do not stockpile materials within drip line of trees to remain.
- C. Compact materials at the optimum moisture content as determined by ASTM D 1557 by aeration or wetting to the following percentages of maximum dry density:
- D. Structure, Pavement, Walkways: Subgrade and each fill layer to 95 percent of maximum dry density to suitable depth.
- E. Unpaved Areas: Top 6 inches of subgrade and each fill layer to 90 percent maximum dry density.

- F. Place acceptable materials in layers not more than 8 inches loose depth for materials compacted by heavy equipment and not more than 4 inches loose depth for materials compacted by hand equipment to subgrades indicated as follows:
 - 1. Structural Fill: Use under foundations, slabs on grade in layers as indicated.
 - 2. Drainage Fill: Use under designated building slabs, at foundation drainage and elsewhere as indicated.
 - 3. Common Fill: Use under unpaved areas.
 - 4. Subbase Material: Use under pavement, walks, steps, piping and conduit.
- G. Grading Tolerances Outside Building Lines:
 - 1. Lawns, unpaved areas, and walks, plus or minus 1 inch.
 - 2. Pavements, plus or minus 1/2 inch.
- H. Grading Tolerance for Fill Under Building Slabs: Plus or minus 1/2 inch measured with 10-foot straightedge.
- I. Protect newly graded areas from traffic and erosion. Recompact and regrade settled, disturbed and damaged areas as necessary to restore quality, appearance, and condition of work.
- J. Control erosion to prevent runoff into sewers or damage to sloped or surfaced areas.
- K. Control dust to prevent hazards to adjacent properties and vehicles. Immediately repair or remedy damage caused by dust including air filters in equipment and vehicles. Clean soiled surfaces.
- L. Dispose of waste and unsuitable materials off-site in a legal manner.

END OF SECTION 312000

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SECTION 312316 – EXCAVATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Excavating for slabs-on-grade, paving, and utilities within the building.

1.2 RELATED REQUIREMENTS

- A. Section 017300 - Execution Requirements
- B. Section 312323 - Fill and Backfill: Fill materials, filling, and compacting.

1.3 PROJECT CONDITIONS

- A. Verify that survey bench mark and intended elevations for the Work are as indicated.

PART 2 - PRODUCTS (Not Used)

2.1 EXAMINATION

- A. Verify that survey bench mark and intended elevations for the work are as indicated.

2.2 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate, identify, and protect utilities that remain and protect from damage.
- C. Notify utility company to remove and relocate utilities.
- D. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

2.3 EXCAVATING

- A. Excavate to accommodate new structures and construction operations.
- B. Notify Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- C. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.
- D. Do not interfere with 45 degree bearing splay of foundations.
- E. Cut utility trenches wide enough to allow inspection of installed utilities.
- F. Hand trim excavations. Remove loose matter.
- G. Correct areas that are over-excavated and load-bearing surfaces that are disturbed

- H. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- I. Remove excavated material that is unsuitable for re-use from site.
- J. Remove excess excavated material from site.

2.4 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for general requirements for field inspection and testing.
- B. Provide for visual inspection of load-bearing excavated surfaces before placement of foundations.

2.5 PROTECTION

- A. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

END OF SECTION

SECTION 312323 – SELECT FILL AND BACKFILL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Filling, backfilling, and compacting for footings, slabs-on-grade, paving, and utilities within the building.
- B. Backfilling and compacting for utilities outside the building to utility main connections.
- C. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.

1.2 RELATED REQUIREMENTS

- A. Section 312316 - Excavation: Removal and handling of soil to be re-used.
- B. Section 033000 - Cast-in-Place Concrete.
- C. Section 321315 – Granular Material

1.3 DEFINITIONS

- A. Finish Grade Elevations: Indicated on drawings.
- B. Subgrade Elevations: Indicated on drawings.

1.4 REFERENCE STANDARDS

- A. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop; American Association of State Highway and Transportation Officials; 2009.
- B. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2007.
- C. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method; 2007.
- D. ASTM D 1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN m/m³)); 2007.
- E. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 2008.
- F. ASTM D 2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2006.
- G. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth); 2005.

- H. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 2005.
- I. ASTM D 4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils; 2005.

1.5 SUBMITTALS

- A. See Section 013300 - Submittal Procedures.
- B. Samples: 10 lb sample of each type of fill; submit in air-tight containers to testing laboratory.
- C. Materials Sources: Submit name of imported materials source.
- D. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used.
- E. Compaction Density Test Reports.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where indicated.
 - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
 - 2. Prevent contamination.
 - 3. Protect stockpiles from erosion and deterioration of materials.

PART 2 - PRODUCTS

2.1 SELECT FILL MATERIALS

- A. Select Fill - Mississippi River pump sand or approved equal.
- B. Clean Mason Sand – Reference Granular Materials specification.
- C. Sand - Fill Type Mississippi River pump sand.: Natural river or bank sand; washed; free of silt, clay, loam, friable or soluble materials, and organic matter.
 - 1. Acceptable ASTM D2478 grades: GW, GP, GM, SM, SW, and SP.
 - 2. Maximum plasticity index = 25.
 - 3. Maximum liquid limit = 45%
 - 4. Free of roots, clay lumps, or other deleterious material
 - 5. Less than 10% passing No. 200 sieve
 - 6. Maximum organic content = 5% by weight.

2.2 ACCESSORIES

- A. Vapor Retarder: See Cast in Place Concrete 033000

2.3 SOURCE QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for general requirements for testing and analysis of soil material.
- B. Where fill materials are specified by reference to a specific standard, testing of samples for compliance will be provided before delivery to site.
- C. If tests indicate materials do not meet specified requirements, change material and retest.
- D. Provide materials of each type from same source throughout the Work.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that survey bench mark and intended elevations for the work are as indicated.
- B. Identify required lines, levels, contours, and datum locations.
- C. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.
- D. Verify structural ability of unsupported walls to support imposed loads by the fill.

3.2 PREPARATION

- A. Scarify subgrade surface to a depth of 6 inches to identify soft spots.
- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with select fill. as required by Section 3.3 Filling of this Specification.
- C. Compact any disturbed subgrade to density equal to or greater than requirements for subsequent fill material.
- D. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.
- E. Comply with any other directions of applicable project Geotechnical Report.
- F. Sheeting, shoring, and associated excavation shall be performed in accordance with OSHA guidelines and is the Contractor's responsibility.

3.3 FILLING

- A. Fill to contours and elevations indicated using unfrozen materials.
- B. Fill up to subgrade elevations unless otherwise indicated.
- C. Employ a placement method that does not disturb or damage other work.
- D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.

- F. Granular Fill: Place and compact materials in equal continuous layers not exceeding 8 inches compacted depth.
- G. Correct areas that are over-excavated.
 - 1. Other areas: Use general fill, flush to required elevation, compacted to minimum 95 percent of maximum dry density.
- H. Compaction Density Unless Otherwise Specified or Indicated:
 - 1. Under paving, slabs-on-grade, and similar construction: 95 percent of maximum dry density.
- I. Comply with any other directions of applicable project Geotechnical Report.
- J. Backfill both sides of all foundation and retaining walls equally until low side is up to finish grade. Do not backfill any walls until concrete has reached its specified 28-day compressive strength.

3.4 TOLERANCES

- A. Top Surface of General Filling: Plus or minus 1 inch from required elevations.
- B. Top Surface of Filling Under Paved Areas: Plus or minus 1 inch from required elevations.

3.5 FIELD QUALITY CONTROL

- A. Perform in situ compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D3017.
- B. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D 1557 ("Modified Proctor")
- C. If tests indicate work does not meet specified requirements, remove work, replace and retest.
- D. Frequency of Tests: 1/250 s.f or 1/25 l.f. trench.
- E. Testing agency shall be retained by the Owner or Contractor.

3.6 CLEANING

- A. Leave unused materials in a neat, compact stockpile.
- B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

3.7 PAYMENT

- A. No separate measurement or payment will be made for services or products related to all fill and backfill. All costs in connection to this section shall be included in the contract prices for the items of work to which the work is incidental.

END OF SECTION

SECTION 312500 - EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and all general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 WORK TO BE PERFORMED

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including, but not limited to, the following:
 - 1. The work to be performed is shown on the Drawings listed on the contract from. The work shall be performed in accordance with Town of Deerfield Specification, Massachusetts Highway Department (MHD) Standard Specifications for Highways and Bridges, Latest Edition. Said documents are by reference made a part of the contract.
 - 2. Furnish and Install all slope protection, sedimentation and erosion control measures as necessary to retain all erosion and sediments within the construction area, as shown on the Drawings and/or as specified herein, including, but not limited to:
 - a. Provide and maintain hay bales or erosion control silt fence for control of soil runoff on exposed slopes, drainage structures and temporary stockpiles.
 - b. Seeding annual ryegrass, installing erosion control blankets, or temporary mulch as a temporary cover on all exposed slopes and stockpiled topsoil.
 - c. Providing stone construction entrance pads to site and cleaning adjacent roadway surfaces of all accumulated sediment and debris as required or a minimum of once per week.
 - d. Temporary settling basins.
 - e. Erosion Control Blankets (ECB) on all key identified slopes.
 - f. Temporary seeding and lawn stabilization of disturbed areas.
 - g. Dust control.
 - h. Provide and maintain drain inlet Sediment Control Bags at all existing or new catch basins to which runoff from the construction site contributes to.
- B. The following Related Work is specified under the designated Sections:
 - 1. Section 311000 – SITE PREPARATION
 - 2. Section 310000 – EARTHWORK
 - 3. Section 321216 – BITUMINOUS CONCRETE PAVING
 - 4. Section 330000 – SITE UTILITIES

1.3 QUALITY ASSURANCE

- A. Material Standards and Standards of Workmanship: Equal to the Commonwealth of Massachusetts Guidelines for Soil Erosion and Sediment Control and Local Town Requirements.
- B. Requirements specified and noted on drawings are minimum. Provide additional measures as required by the local, State or Federal authorities as a result of Contractor's specific scheduling and Work sequencing, or weather conditions at no additional cost to the Owner.

- C. Qualifications: Engaged firm shall be able to demonstrate experience in the installation of the erosion and sedimentation controls described in the Contract Documents.

1.4 SUBMITTALS

- A. A. Product data for the following:
 - 1. Silt Fence
 - 2. Erosion control blankets.
 - 3. Soil stabilizers.
 - 4. Sediment Control Bags.
 - 5. Fertilizers, seed.
 - 6. Limestone.
 - 7. Chemical preservatives and controls – also confirm that each of the materials proposed to be applied are permitted within the Commonwealth of Massachusetts and the Town of Deerfield.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Seed, Fertilizer and Lime: Deliver in original sealed, labeled, and undamaged containers, showing weights, analysis, and name of manufacturer.
- B. Protect materials from deterioration during delivery and while stored at site.

1.6 COORDINATION AND SCHEDULING

- A. General: Sow lawn seed and install all stabilization measures as soon as possible in accordance with the Contractor's schedule.
- B. Weather Limitations: Proceed with lawn development only when existing and forecast weather conditions are suitable for work.

1.7 MAINTENANCE

- A. Begin maintenance of stabilized areas immediately after each area is stabilized and continue until project is accepted.
- B. Maintain and establish all disturbed areas by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and mulch to produce a uniformly smooth lawn.
 - 1. Replant bare areas.
 - 2. Add new mulch and tackifier in areas where mulch has been disturbed by wind or maintenance operations sufficiently to nullify its purpose. Anchor as required to prevent displacement.

1.8 JOB CONDITIONS

- A. Existing Conditions: The contractor shall examine all work that the work of this Section is contingent upon, and report any deficiencies to the Architect. Commencement of the work will be construed to mean complete acceptance by the Contractor of the preparatory work of others. No adjustment will be made for discrepancies brought to the Architect's attention after work has begun.

1.9 PROTECTION OF ADJACENT LANDS

- A. The Contractor shall be totally responsible for protection of any lands or properties as may be subject to any effect or by-product of his demolition/construction effort. Special care shall be taken to avoid erosion of fill or cut slopes onto adjacent properties or downstream siltation of diversion of existing surface drainage. Any damage is to be corrected immediately.
- B. Erosions control measures in the locations shown and as detailed and described in the Contract Documents shall be considered minimum requirements and the Contractor shall take whatever other erosion and sedimentation controls steps necessary to accommodate his particular construction procedures.

1.10 SCHEDULE PROCEDURE

- A. Erosion control construction shall be done prior to the commencement of demolition, site preparation or earthwork operations. The initial method outlined herein is intended to route all practicable surface water from the excavation area into erosion control facilities. The Contractor shall install any additional protective measures as may be required to control siltation from the site.
- B. The following sequence of construction shall be followed: Revisions shall be only with the approval of the Architect and the responsible municipal governing agency.
 - 1. Place sedimentation control measures along slopes, at catch basins and across swales and outfalls as shown on the Drawings, and where directed by the Architect.
 - 2. Proceed with construction of the remaining items of work in accordance with the approved project sequence and schedule. The contractor shall be responsible for maintaining the integrity of all sediment and erosion control measures for the duration of the Contract.
 - 3. Clean and maintain all sedimentation control components to achieve the intended purpose of both temporary and permanent erosion and sediment control facilities.

PART 2 - PRODUCTS

2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysts' "Rules for Testing Seeds" for purity and germination tolerance.
 - 1. Seed Mixture: 50% Annual Ryegrass; clean with a minimum of 0.50% noxious weed seed; minimum 97% pure with a germination rate minimum of 80%.
 - 2. If seeding occurs after September 15, substitute winter rye for annual rye grass.
- B. Straw Mulch: Provide air-dry, clean, mildew-and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- C. Fiber Mulch: Biodegradable dye-wood cellulose-fiber mulch, nontoxic, free of plant growth or germination-inhibitors, with maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.
- D. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application, nontoxic and free of plant growth-or germination-inhibitors.

2.2 EROSION-CONTROL MATERIALS

- A. Standard Size Bales of hay or straw, having no loose or decomposed baling twine.
- B. Erosion Control Blanket: C125BN coconut fiber erosion control blanket (100% biodegradable) as manufactured by North American Green or approved Equal. Include biodegradable stakes.
- C. Temporary Mulch: Straw hydromulch or other approved product.
- C. Fiber Mesh: Biodegradable twisted jute or spun-coir mesh, 0.92 lb. Per sq. yd. (0.5 kg per sq. m) minimum, with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches (150mm) long.

2.3 SILTATION FENCE

- A. Silt fence shall consist of the following elements:

- 1. Fabric for siltation fence shall be a minimum width of 3 feet and conforming to the following criteria:

MINIMUM ACCEPTABLE		
<u>Fabric Properties</u>		<u>Test Method</u>
Grab Tensile Strength (lbs)	124	ASTM D 4632
Grab Tensile Elongation (%)	15	ASTM D 4632
Mullen Burst Strength (psi)	300	ASTM D 3786
Puncture Strength (lbs)	65	ASTM D 4833
Flow Rate (gal/min/sf)	10	ASTM D 4491
Apparent Opening Size (sieve)	30	ASTM D 4751
Ultraviolet Stability (% strength retained)	70	ASTM D 4355

- 2. Acceptable fabric materials include "Mirafi Envirofence" by TenCate Mirafi, "Style 2130" by Amoco Fabrics Co., and "LS125-Super Grade" by ACF Environmental, or as approved by the Engineer.
- 3. Silt fence posts shall be wood or metal. Wood posts shall be a minimum of 1½ inch by 1½ inch by 5 feet long hardwood stakes commonly used to support siltation fabric. Metal posts shall be a minimum of 1 inch diameter and 5 feet long. Posts shall be spaced at a maximum distance of 8 feet on center.
- 4. Furnish and install suitable nylon cord to secure abutting silt fence posts.

2.4 CRUSHED STONE: CONFORM TO MHD, SECTION M2.01.1, GRADATION 2".

PART 3 - EXECUTION

3.1 CONSTRUCTION ENTRANCE

- A. Install construction entrances to each project work area and staging area. Location and number of entrances to be modified based on Contractor's specific sequencing of work and as approved by the Architect. Maintain each entrance by regrading and providing additional stone as required to maintain a clean and open surface.
 - 1. Dimensions: 50' length minimum (typical), 6" depth of crushed stone. Refer to Contract Drawings.

2. Adjacent pavements are to be kept clean of construction generated sediment and debris. Sweeping shall occur once per week at a minimum or more frequently if so required.

3.2 TEMPORARY SETTLING BASINS

- A. A. Construction temporary settling basins and install erosion control devices washer indicated and around existing and proposed drainage structures in accordance with manufacturer's installation and recommendations. Make any adjustment to location as required by field condition, the Architect, or local Town officials. Install erosion control at limits of grading and topsoil stripping elevations. Do not allow any sediment to enter existing drainage piping systems or wetlands.

3.3 MAINTENANCE

- A. All erosion control measures are to be inspected on a weekly basis and after each rain event resulting in greater than or equal to 0.25 inches per 24-hour period by a designated employee of the General Contractor. The Contractor shall maintain inspection and maintenance logs on site at all times.
- B. Maintain basins and Erosion control devices by restaking and replacing as required. Remove buildup of silt as necessary or as directed by the Architect. Maintain operations until all lawn/planted areas are stabilized and all paving is completed.

3.4 TEMPORARY SEEDING

- A. Seed all exposed slopes and stockpiled topsoil with winter or annual ryegrass at a rate of two (2) pounds/1,000 sq. feet of area. Seeding shall be done immediately after rough grading operations are complete and maintained until finish grading and seeding have begun.

3.5 HYDROMULCHING/HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer, and maximum 10% of fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogenous slurry suitable for hydraulic application.
 1. Mix slurry with nonasphaltic tackifier.
 2. Apply slurry uniformly to all area to be seeded in a 2-step process. Apply first slurry application at the minimum rate of 500 lb. Per are (5.5 kg per 100 sq. m) dry weight but not less than the rate required to obtain specified seed-sowing rate. Apply slurry cover coat of fiber mulch at a rate of 1200 lb. Per acre (11 kg per 100 sq. m).

3.6 TEMPORARY EROSION CONTROL FABRIC OR MULCH

- A. Temporary Erosion Control Fabric or Mulch: Immediately upon formation of rough grades, install on all key identified slopes as per manufacturer's recommendations or slopes steeper than one foot vertical to three feet horizontal or any areas and drainage swales which receive concentrated run-off water and areas that are susceptible to erosion as required by the Architect. Overlap joint of erosion control blankets one foot and secure as recommended by the manufacturer. Maintain until permanent vegetative cover is established.

3.7 CLEAN UP

- A. Upon stabilization of all disturbed areas and the completing of construction activity, remove all erosion control devices including stone construction entrances and restore surrounding areas to acceptable conditions.

END OF SECTION

SECTION 316219 - TIMBER PILES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Wood piles, preservative treated.

1.2 REFERENCE STANDARDS

- A. ASTM D25 - Standard Specification for Round Timber Piles; Latest Edition.
- B. AWP A U1 - Use Category System: User Specification for Treated Wood; American Wood Protection Association; Latest Edition.
- C. AWP A M4 - Standard for the Care of Preservative-Treated Wood Products; American Wood Protection Association; Latest Edition.
- D. Special Provisions for the City of New Orleans, Section 1811 Building Code of City of New Orleans, Latest Edition.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the Work of this section; require attendance by all affected installers.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. A pile layout plan referenced to the structural plans including a numbering system capable of identifying each individual pile.
- C. Pile-Driving Equipment Data: Include type, make, and rated energy range; weight of striking part of hammer; weight of drive cap; and, type, size, and properties of hammer cushion
- D. Submit evidence of preservative treatment certification.

1.5 QUALITY ASSURANCE

- A. Design and select pile components under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in Louisiana.
- B. Installer: Company specializing in performing the work of this section with a minimum of (5) years experience
 - 1. Installer's responsibility included engaging a qualified professional engineer to prepare pile driving records, provide test pile program if required, and provide vibration monitoring if required.
- C. The Installer shall submit copy of the installation record of each pile not later than three days after installation is completed. Include:

1. Sizes, lengths, and locations of piles
2. Sequence of driving.
3. Number of blows per foot for entire length of piles and measured set for last 10 blows.
4. Final tip and head elevations.
5. Driving force of each hammer blow.
6. Type and size of equipment.
7. Alignment deviations.
8. Pile-driving start and finish times, and total driving time.
9. Time, pile-tip elevation, and reason for interruptions.
10. Preboring, jetting, or special procedures used.
11. Unusual occurrences during pile driving.
12. Records of redriving

- D. Load test reports, shall be in accordance with the applicable ASTM Standards, and prepared by a qualified Engineer licensed in Louisiana.
- E. Vibration monitoring reports as prepared by a qualified Engineer licensed in Louisiana.

1.6 PILE LOAD TESTS

- A. None required.

1.7 CONTRACTOR DUTIES

- A. Protection of Property: Take proper and necessary precautions to protect the existing adjacent buildings, sewers, and utilities from damage due to the execution of the Piling work. Should damage occur due to the Contractor's negligence, responsibility and cost for repairing or replacing the work in its original condition shall be borne by the Contractor, without additional compensation. The Contractor shall document all existing properties that are located on streets that bound the block on which the work occurs. The Contractor shall contact all neighboring owners to receive permission for photographic documentation of both interiors and exteriors of all structures and property improvements. Written documentation shall be provided for all homeowners refusing to allow documentation. Upon obtaining written authorization from neighboring property owners, Contractor shall take photos as described below.
- B. Documentation: Preconstruction Photographs: Inventory and record the condition of adjacent structures that are located on streets that bound the block on which the work occurs. Provide photographs of conditions that might be misconstrued as damage caused by pile driving. Photographs must be of quality and detail to clearly document all pre-existing conditions of the adjacent structures with respect to structural foundations, building cracking/shifting, etc. Contractor is required to obtain adjacent property owner's authorization to photograph exterior and interior pre-existing conditions. Exterior photographs must be documented with vegetation and other visual barriers avoided. Photographs to be taken behind vegetation and barriers with appropriate detail and lighting control to view conditions clearly. All photographs must have "date imprint" visible on photographic image to verify date of recording.
- C. Notification: The Contractor shall notify the Architect and the Testing Laboratory 48 hours prior to driving initial pile. Pile driving must not commence without representatives of the Testing Laboratory being present.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Piles Below Building Structure: ASTM D 25; Southern Pine, unused, clean peeled, one piece, non-spliced.
- B. See drawings for size, length and design load
- C. Treatment: Preservative treated pressure impregnated with CCA (Chromated Copper Arsenate) type preservative treatment with minimum retention of .80 lb/cu ft in accordance with AWPAs Standard U1 and Use Category UC4B.

2.2 DELIVER, STORAGE, AND HANDLING

- A. Deliver piles to Project site in such quantities and at such times to ensure continuity of installation.
- B. Handle and store piles at Project site to prevent breaks, cuts, abrasions, or other physical damage and as required by AWPAs M4.
- C. Do not drill holes or drive spikes or nails into pile below cutoff elevation unless required for tension pile apparatus.

2.3 DRIVING EQUIPMENT

- A. Obtain prior approval of hammer type to be used.
- B. Piles shall be driven with a single acting air hammer developing a manufacturer rated energy as noted below.
 - 1. Class B piles – Vulcan #1 Hammer (15,000 ft-lbs)
 - 2. Class 5 piles – Vulcan #2 Hammer (7,260 ft-lbs)
- C. Hammer Cushions and Driving Caps: Between hammer and top of pile, provide hammer cushion and steel driving cap as recommended by hammer manufacturer and as required to drive pile without damage.
- D. Leads: Use fixed leads that will hold full length of pile firmly in position and in axial alignment with hammer.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Obtain prior approval of hammer type to be used. See Driving Equipment.
- B. Use driving method that will not cause damage to nearby structures.
- C. Notify adjacent and affected land owners and building occupants with 30 days notice before proceeding with the Work.
- D. Protect structures near the work from damage.

- E. Prepare to place piles from existing site elevations.

3.2 INSTALLATION

- A. Continuously drive piles to elevations per Drawings.
- B. Establish and maintain axial alignment of leads and piles during driving.
- C. Protect pile head during driving using collar, with full bearing on pile butt for even distribution of hammer blow.
- D. Deliver hammer blows to central axis of pile.
- E. Refusal shall be 25 blows/ft or (2) consecutive feet of 20 blows/ft
- F. If driving is interrupted before refusal, drive an additional 12 inches before resuming recording of performance data.
- G. Re-drive piles that have lifted due to driving adjacent piles, or by soil uplift.
- H. Do not damage piles during driving operations.
- I. Cut off tops of piles to elevations indicated and prepare pile top to receive pile cap.
 - 1. Prepare piles to receive tension pile apparatus as required on Drawings.
- J. Splices will not be permitted in timber piles.
- K. Apply preservative to exposed ends of cut-off piles in accordance with AWPA M4
- L. Protect structures, underground utilities, and other construction from damage caused by pile driving.
- M. Pile-Length Markings: Mark each pile with horizontal lines at 12-inch intervals; label the distance from pile tip at 60-inch intervals. Maintain markings on piles until driven.

3.3 VIBRATION MONITORING

- A. Vibration measurements with a seismograph during all pile driving operations.
- B. Driving shall be terminated and the Architect advised for sustained peak particle velocities in excess of 0.25 inch per second.
- C. Vibration monitoring shall be performed by the Installer's engaged qualified professional.

3.4 TOLERANCES

- A. Maximum Variation From Vertical For Plumb Piles: 1 in 48.
- B. Maximum Variation From Design Cut-off Elevation: 4 inches.
- C. Maximum Out-of-Position: 2 inches.

3.5 UNACCEPTABLE PILES

- A. Piles that fail tests, are placed out of position, are below cut-off elevations, or are damaged.
 - 1. Abandon and cut-off all unacceptable piles.
- B. Provide additional piles or replace piles to conform to specified requirements. Consult with EOR and provide layout of re-drive piles for final approval.
- C. Remove withdrawn piles and cutoff sections from site and legally dispose of them off the Owner's property.

END OF SECTION

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SECTION 321315 – GRANULAR MATERIAL

PART 1 - GENERAL

1.1 SUMMARY

A. Related Documents:

1. Drawings and general provisions of the Subcontract apply to this Section.
2. Review these documents for coordination with additional requirements and information that apply to work under this Section.

1.2 DESCRIPTION

- A. This work consists of subgrade drainage courses, and furnishing and placing batture sand for dressing behind the curb and granular material for other adjustments, in accordance with these Specifications and in conformity with the lines, grades and typical sections shown on the plans and as directed.

1.3 SECTION INCLUDES

- A. Aggregates and sand materials utilized for base courses, subbase materials, choking course, energy dissipation material, and pipe outlet aprons.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Site Storage: Store aggregate material(s) at/in an on-site covered location or one where material will not be contaminated or impacted by siltation.

1.5 SITE CONDITONS

- A. Unfavorable Weather: When weather is such that satisfactory results cannot be secured, suspend operations until the weather is considered favorable.
- B. Wet Subgrades: Do not place material on wet or muddy subgrade.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aggregate materials:

1. Where specified material shall comply with ASTM No.57 specifications
2. Where specified material shall comply with ASTM No.2 specifications
3. Where specified material shall comply with ASTM No.8 or 9 specifications

B. River Rock

1. Finish & Application: smooth, rounded river rock for use near inlet/outlets of pipes. Also used within infiltration trench as shown on drawings.
2. Size: Where specified, varies between 2-4" and 4-6"
3. Thickness: $\frac{3}{4}$ "-2 $\frac{1}{2}$ "
4. Color: to be selected by Engineer and Landscape Architect

- 5. Weight: 7-12 lbs/sf
- C. Water: fresh, clean, potable
- D. Clean Mason Sand:

USAV SAND SPECIFICATIONS

USAV ProCourt Sand Chart

USAV Recommendations for SAND Specifications								
Material Sizes (% retained)	Grade	Gravel	V. Course	Course	Medium	Fine	V.Fine	Pan (Clay+Silt)
	Millimeter	2.0mm	1.0mm	.5mm	.25mm	.15mm	.05mm	
	Screen	#10	#18	#35	#60	#100	#270	
USAV Standards	Benchmark	0	5.1	46	41.8	3.9	2.4	0.7
	USAV CI*	50%	50%	10%	10%	15%	30%	25%
	Acc Var**	0	2.6-7.7	41.4-50.6	37.6-45.9	3.3-4.5	1.7-3.1	0.5-0.9
%Recommended		<2%	<15%	Combined 78% to 100%			<5%	<3%
Penetrometer Value (kg/cm2)		Crusting	Crusting	Color (dry)		Infiltration Rate (In/Hr)		Sphericity/Angularity
Acceptable: 1.8 to 2.4; Superior > 24		Light to None		Personal Preference		>20 inches/hour		Angular to Subangular
*USAV Confidence Interval								
**Acceptable Variance								



2.2 AGGREGATE MATERIAL GRADATIONS

- A. Crushed stone with 90% fractured faces, LA Abrasion < 40 per ASTM C 131
- B. Do not use rounded river gravel for vehicular applications.
- C. All stone materials shall be washed with less than 2% passing the No. 200 sieve.
- D. Joint/opening filler, bedding, base and subbase: conforming to ASTM D448 gradation

Table 1: ASTM No. 8 Grading Requirements Bedding and Joint/Opening Filler

Sieve Size	Percent Passing
12.5 mm (1/2 in.)	100
9.5 mm (3/8 in.)	85 to 100
4.75 mm (No. 4)	10 to 30
2.36 mm (No. 8)	0 to 10
1.16 mm (No. 16)	0 to 5

Table 2: ASTM No. 9 Grading Requirements Bedding and Joint/Opening Filler

Sieve Size	Percent Passing
12.5 mm (1/2 in.)	100
9.5 mm (3/8 in.)	100
4.75 mm (No. 4)	85 to 100
2.36 mm (No. 8)	10 to 40
1.16 mm (No. 16)	0 to 10

Table 3: ASTM No. 57 Base Grading Requirements

Sieve Size	Percent Passing
37.5 mm (1 1/2 in.)	100
25 mm (1 in.)	95 to 100
12.5 mm (1/2 in.)	25 to 60
4.75 mm (No. 4)	0 to 10
2.36 mm (No. 8)	0 to 5

Table 4: Grading Requirement for ASTM No. 2 Subbase

Sieve Size	Percent Passing
75 mm (3 in.)	100
63 mm (2 1/2 in.)	90 to 100
50 mm (2 in.)	35 to 70
37.5 mm (1 1/2 in.)	0 to 15
19 mm (3/4 in.)	0 to 5

E.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of General Conditions: Examine site and verify that conditions are suitable to receive Work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
- B. Subgrade: Review to verify that it has been inspected, graded to the correct grades, and compacted as required for correct installation of aggregate base.
- C. Notification of Unsuitable Conditions: Before proceeding with Work, notify the Project Manager in writing of unsuitable conditions and conflicts.

3.2 PREPARATION

- A. Protection of Existing Conditions:
 - 1. Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, plant materials and walks on or adjacent to the site of the Work.

2. Provide barricades, fences or other barriers to protect existing conditions to remain from damage during construction.
3. Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants to remain.
4. Submit written notification of damaged plants and structures to the Project Manager.

B. Subgrade Preparation:

1. Meet requirements of Project Geotechnical Report recommendations for subgrade preparation prior to placement of aggregate base or cement-treated base.
2. Grade subgrade with uniform slope between points where elevations are given.
3. Use equipment of proper size and appropriate type to achieve grades required.
4. Grade subgrade surface to within 0.05-foot (15 mm) of elevations indicated by the Drawing details.
5. Fill and compact any depressions and remove loose material to finish true to line and grade, presenting a smooth, compacted and unyielding surface, except where indicated otherwise.
6. Remove debris, loose dirt and other extraneous materials.

3.3 AGGREGATE BASES

A. Hauling:

1. Use of dragline equipment to transport aggregate from stockpiles to elevators or other loading devices will not be permitted.
2. Distribute hauling over the area to be paved in such a manner as to be most effective in the compacting of the surfacing.
3. Hauling over any of the surfacing in process of construction will not be permitted when, in the opinion of the University, the effect will be detrimental.
4. Uniformly load hauling vehicles when it is practicable.

B. Placement of Aggregate Base:

1. Spread base in an even distribution of material without perceptible segregation.
2. Method of spreading and field operation shall be in accordance with of LADOTD Specifications.
3. Construct base course in lifts not exceeding 6 inches (150 mm) in depth so that when compacted to the specified density, the finished surface will conform to grades and dimensions shown, with proper allowance for subsequent courses where specified.
4. Construct the base course in an orderly manner so that reasonable size areas will be ready for testing.
5. Equipment such as scrapers, and other equipment essentially used for earth excavation, will not be permitted.
6. Compaction equipment shall be adequate in design and number to obtain the specified density for each layer while still moist.
7. Apply water as needed to obtain the specific densities
8. Place each layer of base course and compact to the specified density before a succeeding layer is placed.

C. Compacting of Aggregate Base:

1. Compact each lift of base as soon after spreading operations as practicable and continue until a density of 95 percent of the maximum density has been achieved as determined in accordance with ASTM D1557.

2. Roll each course of surfacing until the material does not creep under the roller before a succeeding course of surfacing material is applied.
 3. At the outer edges of the surfacing and continue toward the center.
- D. Correction of Surface Defects: Should irregularities develop in any surface during or after rolling, they shall be remedied by loosening the surface and correcting the defects, after which the entire area, including surrounding surfaces, shall be rerolled until thoroughly compacted. Finished surfaces shall be true to grade and crown before proceeding with surfacing.
- E. Final Clean-up:
1. After work is completed, the entire area shall be neatly finished and trimmed to lines, grades and cross sections shown.
 2. Unused construction material shall be removed, and stockpile areas shall be cleaned of aggregate and left in an acceptable condition.

3.4 TOLERANCES

- A. Subgrade Surface: Plus or minus 0.05-foot (15 mm) or elevations indicated by the Drawing details.
- B. Aggregate Base Course Variation from Thickness: Plus or minus 0.05-foot (15 mm).
- C. Aggregate Base Course Finished Surface Smoothness: Plus or minus 1/4-inch (6 mm).

3.5 MEASUREMENT

- A. Soil dressing behind the curb, aggregates, and granular material shall be measured by the cubic yard, truck measure.

3.6 PAYMENT

- A. No separate measurement or payment will be made for services or products related to all granular material. All costs in connection to this section shall be included in the contract prices for the items of work to which the work is incidental.

END OF SECTION

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SECTION 321613 – CURBS AND GUTTERS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This work consists of construction and/or installation of a concrete curb, gutter, stone curb, or timber curb.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 INTEGRAL CONCRETE CURB, STRAIGHT OR CIRCULAR

- A. Integral concrete curb shall be either mountable or barrier curb. Concrete curb and barrier curb shall be constructed monolithically with the same materials, having the same compressive strength and placed and cured in the same manner as the concrete in the roadway slab. The dimensions shall be as shown on standard plans. The overall depth shall be determined by the curb exposure, depth of gutterbottom and roadway slab.
- B. The curb forms shall provide for the dimensions specified and must be set to the established grades.
- C. Premoulded joint filler shall be placed and extended through the entire curb section, at those points where joint filler is used in the roadway slab.

3.2 COMBINED CONCRETE CURB AND GUTTERBOTTOM AND/OR CONCRETE CURB, STRAIGHT OR CIRCULAR

- A. Combined concrete curb and gutterbottom shall be either combined mountable concrete curb and gutterbottom or barrier concrete curb and gutterbottom. Concrete curb shall be either mountable or barrier. The type of concrete curb or concrete curb and gutterbottom to be provided shall be as shown on plans. The forms to be used shall conform to the requirements of these specifications on "FORMS".
- B. The concrete used shall be mixed with the same materials, having the same compressive strength and shall be cured in the same manner as specified for "Reinforced Concrete Roadway Pavements".
- C. Where it is required to construct concrete curb and gutterbottom, the curb and gutterbottom must be poured monolithically.
- D. Undowelled contraction joints shall be placed through the entire width of the concrete curb or curb and gutterbottom, at no greater than fifteen (15') foot intervals. Contraction joints shall be formed by a jointing tool or other acceptable means, having a 2" depth and 1/4" width and filled with silicone sealant or an approved joint sealant.
- E. Dowelled expansion joints shall be placed at intersections, not to exceed three hundred (300') foot intervals, and/or as indicated on the plans.

- F. Pre-moulded joint filler shall be placed through the entire section of the concrete curb or curb and gutterbottom. The concrete curb and gutterbottom shall be reinforced in accordance with the standard plans.
- G. The forms shall provide for the dimensions specified and must be set to the established grades. After placing, concrete shall be worked with a float, in a manner that will thoroughly compact it and provide a surface free from depressions or irregularities of any kind.

3.3 CONCRETE GUTTER

- A. Where the concrete gutter is constructed as a part of combined curb and gutterbottom, it shall conform to the requirements of combined curb and gutterbottom. Jointing shall conform to DPW standard specifications subsections C601.06(a) and C601.06(b).
- B. Where the concrete gutter is constructed in conjunction with roadway pavement, it shall, unless otherwise specified or directed, be poured monolithically with, become part of, be laid at the same time, in the same manner and have the same compressive strength as concrete roadway foundation, for such roadway pavements. It shall be of the same width indicated on the plans and of such depth as will be equal to the combined thickness of the roadway foundation and the roadway pavement wearing surface.
- C. The subgrade shall meet the requirements for roadway pavement sub-grade.
- D. Immediately after the concrete has been placed, it shall be tamped, struck off and worked with a wood float in a manner to provide a surface free from irregularities and depressions, bringing the mortar to the top. The surface shall then be broomed or brushed with a soft hand broom in the direction of the flow line of the gutter. Surface joints shall be made by a steel joining tool and premoulded joint filler shall be placed and extended through the entire gutter section at those joints where filler is used in the roadway slab or curb.
- E. Curing the gutter shall be similar to that provided for roadway pavement.

3.4 STONE CURB

- A. Stone curb shall either be old stone curb or new stone curb as herein specified.
- B. Old stone curb shall be of suitable quality with well-defined face and top, of the depth not less than prescribed for new curb and not less than three (3') feet in length.
- C. New stone curb shall be best North River Blue Stone or Cabin Creek Blue Stone or Granite or similar stone acceptable to the DPW Director, and shall measure five (5") inches in thickness for the remainder of depth, and in lengths of not less than five (5') feet except for closures. It shall be of such depth as may be indicated on the plans or otherwise specified. The top of the curb shall be peen-hammer dressed, and the face for ten (10") inches below the top pointed, so that there will be no protrusions or depressions measuring more than one-half (1/2") inch from a straightedge laid in any direction parallel to the general surface. All ends shall be squared so as to form close-fitting joints. No drill holes will be permitted to show on any exposed surface. All edges shall be well-defined.
- D. Closures shall not be less than two and one-half (2-1/2') feet in length and must not be placed adjacent to catch basins or over fresh excavations or adjacent to one another. No more than three (3) such closures will be allowed between any two fixed points such as circular curb for corners, circular curb for driveways or catch basins.

3.5 SETTING AND RESETTING STONE CURBS

- A. Stone curb shall be set to lines and grades indicated on plans, or as may be otherwise directed. The subgrade on which the curb base is to be placed shall be excavated and thoroughly tamped by means of a pneumatic tamper.
- B. After the curb has been set to proper line and grade as above, the Contractor shall place under each curb joint, or as close thereto as may be practical, a concrete pier. These piers and concrete base shall be constructed in accordance with dimensions shown on the detail plans, care being taken that the excavation therefore made prior to the pouring of the concrete is evenly cut and as nearly true to the plans as the character of the excavation materials will permit. Care should be taken also, that all loose material is removed from the finished subgrade of the roadway prior to pouring concrete.
- C. One pier shall be provided under each curb joint except in cases where it is impractical to construct one at said point, as where a drain sewer or gas service is directly under the joint and is sufficiently high to prevent the pier being built to the dimensions shown on the plans. In this case, two (2) piers shall be constructed, one (1) on each side of the curb joint and as close thereto as practical.
- D. After setting curb, the excavated area behind same shall be backfilled by tamping and this filling shall be brought to the top of the back of the curb.
- E. Old stone curb of proper quality and dimensions will be relined and reset at its present location when required by the proposal or special specifications, or it shall be removed to other points within the limits of the project, as may be designated by the DPW Director, and there reset.
- F. The ends of all curb, whether new or old, shall be neatly squared so as to form close-fitting joints. Joint filler one-half (1/2") inch in thickness shall be placed adjacent to catch basins and circular curbs when setting stone curbs. All joints in stone curb shall be thoroughly and neatly pointed with mortar. The joints in the precast concrete curbs shall be neatly filled with a joint filler, one-eighth (1/8") inch thick. This joint filler material shall be finished flush with the top and roadway face of the curb.
- G. When stipulated in the Uniform Bid Form and Special Specifications, that curb shall be set in a recess in the concrete foundation of the pavement, then this shall be done only after the concrete has become thoroughly hardened. The recess shall be cleared of all foreign matter and on its bottom surface there shall be placed a bed of stiff mortar, varying from one-quarter (1/4") inch to three quarter (3/4") inch in thickness and averaging one-half (1/2") inch in thickness depending on the irregularities in the bottom of the stone curb, or the concrete roadway foundation. When the curb stones have been so set, the recess on both sides of the curb shall be filled from top to bottom with liquid mortar. Compensation for providing the recess and for filling same with mortar after the curb has been set shall be included in the price per linear foot bid in the proposal for curb.
- H. Cuts of proper dimensions, executed in a neat and workmanlike manner shall be made where directed and where required in both new and old curb for drain pipe or gas pipe where required under the curb for connections. No additional compensation shall be made for such cuts.
- I. No extra compensation will be allowed for removing obstructions, gallery or shed posts, etc. that may be encountered in setting new or old curb, nor will any extra compensation be allowed for shoring or reinforcing sheds or galleries that may be necessary.

3.6 CIRCULAR STONE CURB

- A. Circular stone curb shall be granite, free of stratification and excess of mica, flint and feldspar. The entire top shall be peen-hammer dressed, and the face of eight (8") inches from the top and the back for four (4") inches from the top of the curb shall be neatly pointed. All edges shall be well defined. The stone shall have squared and neatly finished ends, so as to form close-fitting joints.
- B. Circular stone curb shall be of the radius indicated on plans or as otherwise specified. When the radius is two (2') feet or less, the circular curb shall be in one (1) piece; where the radius is more than two (2') feet, and not more than four (4') feet, the circular curb shall be in two (2) pieces; where the radius is more than four (4') feet, and not more than six (6') feet, the circular curb shall be in three (3) pieces; where the radius is more than six (6') feet, and not more than eight (8') feet, the circular curb shall be in four (4) pieces; where the radius is more than eight (8') feet, and not more than ten (10') feet, the circular curb shall be in five (5) pieces; and where the radius is more than ten (10') feet, and not more than twelve (12') feet, the circular curb shall be in six (6) pieces.
- C. Circular stone curb shall be twelve (12") inches in depth, five (5") inches in width at both ends, and of such widths intermediate to the ends as shown on plans.

3.7 SETTING CIRCULAR STONE CURB

- A. Circular curb shall be of the quality and dimensions hereinbefore prescribed for circular curb.
- B. All joints in circular stone curb shall be thoroughly and neatly jointed with mortar and such amount of lamp black added as may be necessary to make the color of the mortar correspond with the color of the stone immediately after it has been set and while it is to correct line and grade.
- C. Circular curb shall be placed on a concrete foundation four (4") inches in thickness mixed in proportion of one (1) part cement to three (3) parts fine aggregate to six (6) parts coarse aggregate.

3.8 TIMBER CURB

- A. Timber curb shall be placed on the lines and at the grades as shown on the drawings or as furnished by the DPW Director, and shall be of the dimensions indicated on the plans and herein described.
- B. The face of curbs shall be set either barrier or with a batter as may be designated.
- C. Timber curb shall be formed of either creosoted No. 1 Common Pine, twelve (12 lb.) pound treatment, or treated No. 1 Common Pine .6 lb/cf of CCA, anchors, braces, sills and boards as shown on plans and herein described.
- D. Posts shall measure four (4") inches by four (4") inches and generally the length shall be three
- E. (3) times the depth of the finished curb measured on its surface. Posts shall generally be spaced six (6') foot centers apart.
- F. Boards shall be three (3") inches thick and not less than eight (8") inches wide and generally not less than sixteen (16') feet long. They shall be laid horizontal with close-fitting sides and end

joints. Joints shall be broken so that boards alongside of each other shall not break joints on the same posts.

- G. At such points as may be designated, cuts of proper dimensions, executed in a neat and workmanlike manner shall be made for drain pipe connections and for the proper construction of foot bridges. No direct compensation shall be made for such cuts.

3.9 MEASUREMENT

- A. The length of curb, gutter, and curb and gutterbottom will be established by measurements of the actual curb, gutter and curb and gutterbottom in place and no allowance will be made for waste due to closures or other causes.
- B. Circular curb shall be measured at the top outer face.
- C. Timber curb will be measured by the number of board feet (MFBM) including board and posts.
- D. Joint materials, rebars, concrete base and piers for stone curb or resetting existing curb shall not be measured for payment.
- E. Excavation for reconstruction of curb and gutter bottom only, and excavation for setting and resetting stone curbs in rehabilitating projects shall not be measured for payment.

END OF SECTION

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SECTION 321623 – SIDEWALKS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This work consists of construction of sidewalks and related access features

1.2 RELATED REQUIREMENTS

- A. Sidewalks and ramps shall comply with the most current regulations for Titles II and III of the Americans with Disabilities Act of 1990 (ADA) and applicable accessibility standards published by the Department of Justice (the 2010 ADA Standards for Accessible Design, "2010 Standards", or later).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SIDEWALKS AND RAMP ACCESSIBILITY

- A. An ADA curb ramp is a short ramp cutting through a curb or built up to it to provide an accessible path of travel.
1. On a curb ramp, the running slope is the slope in the direction of pedestrian travel on the ramp run and must be 8.33 percent (1:12) or less. Where provided, curb ramp flares shall not be steeper than 1:10.
 2. On a curb ramp, the cross slope is the slope perpendicular to [across] the direction of pedestrian travel on the ramp run and the cross slope of the ramp run itself may not exceed 2 percent (1:50).
 3. The ramp, or ramp run, must be at least 48 inches wide, not including the flared sides. The ramp run must have detectable warnings – i.e., dome-shaped bumps – that extend the full width and depth of the ramp.
 4. Transitions from the ramp to the walkway, gutter, and street must be flush (level) and free of abrupt level changes. The gutter must have a slope of no more than 5 percent (1:20) toward the ramp.
 5. Landings shall be provided at the tops of curb ramps. The minimum landing clear length shall be 48 inches. The landing clear width shall be at least as wide as the curb ramp, excluding flared sides, leading to the landing.
 6. Diagonal or corner type curb ramps with returned curbs or other well-defined edges shall have the edges parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have a clear space of 48 inches minimum outside active traffic lanes of the roadway. Diagonal curb ramps provided at marked crossings shall provide the 48 inches minimum clear space within the markings. Diagonal curb ramps with flared sides shall have a segment of curb 24 inches long minimum, located on each side of the curb ramp and within the marked crossing.
- B. Raised islands in crossings shall be cut through level with the street or have curb ramps at both sides. Each curb ramp shall have a level area 48 inches long minimum by 48 inches wide minimum at the top of the curb ramp in the part of the island intersected by the crossings. Each 48 inch minimum by 48 inch minimum area shall be oriented so that the 48 inch minimum length is in the direction of the running slope of the curb ramp it serves. The 48 inch minimum by 48 inch minimum areas and the accessible route shall be permitted to overlap.

- C. The running slope of sidewalks must be 5 percent (1:20) or less. The cross slope of sidewalks must be 2 percent (1:50) or less. The clear width of sidewalks shall be at least 48 inches and a sidewalk with a clear width of less than 60 inches shall provide passing spaces at intervals of 200 feet maximum. If the longitudinal slope of the sidewalk exceeds 1:20, it is considered a ramp and a level landing must be provided for every 30-inch change in elevation.

3.2 PORTLAND CEMENT CONCRETE SIDEWALK OR BANQUETTE PAVEMENT

- A. Portland cement concrete sidewalk or banquette pavement shall be of such widths and fixed at such elevations as may be stipulated in the proposal and Special Specifications, or may be otherwise designated by the DPW Director. They shall consist of a one course Portland cement concrete pavement four (4") inches in thickness.
- B. The concrete shall have a minimum compressive strength of three thousand (3,000) psi. at twenty-eight (28) days. The minimum cement content shall be five and one-half (5-1/2) bags per cubic yard of concrete. The maximum water content, including free water in the aggregate, shall not be greater than six (6) gallons per bag of cement. The consistency of concrete shall be such as to have a slump of from two (2") inches to four (4") inches.
 - 1. Sidewalks or banquettes shall be reinforced with 6 X 6 – W2.9 X W2.9 wire mesh weighing forty-two (42) pounds per hundred square feet.
- C. In preparing the subgrade on which the Portland cement concrete sidewalk or banquette pavement will be placed, all soft and spongy places shall be removed and all depressions filled with suitable materials which shall be thoroughly compacted in layers not exceeding six (6") inches in thickness. The subgrade shall be thoroughly tamped until it is brought to a firm, unyielding surface. It shall have a slope in conformity with the slope of the finished surface of the Portland cement concrete sidewalk or banquette pavement.
- D. When the Portland cement concrete sidewalk or banquette pavement is to be constructed over an old path composed of gravel or cinder, the old path shall be entirely loosened, the material spread for the full width of the subgrade and compacted as specified.
- E. All fills shall be made in a manner satisfactory to the DPW Director. The use of muck, quicksand, soft clay, spongy or perishable material is prohibited. The top of all fills shall extend at least two (2') feet beyond the sidewalk or banquette pavement on each side and the sides shall have a maximum slope not greater than one (1) vertical to one and one-half (1-1/2) horizontal before any Portland cement concrete sidewalk or banquette pavement will be allowed to be placed thereon.
- F. Concrete shall be of the strength and consistency herein before described. The method of mixing and placing shall be in conformance with the requirements for DPW Specifications Subsections C601.20 and C601.21, Portland cement concrete pavement. Concrete that does not flush readily shall be removed immediately from the grade and not re-used, except that the coarse aggregate can be salvaged by washing.
- G. After mixing, the concrete shall be handled rapidly and the successive batches deposited in a continuous operation completing individual sections to the required depth and width. The forms shall be filled and the concrete struck off and tamped. The method of placing the various sections shall be such as to produce a straight clean joint between them so as to make each section an independent unit. If dirt, dust or other foreign substances collect on the surface, they shall be removed before the trowelling is started.

- H. After the concrete has been tamped in accordance with subsection 2 (e), it will be brought to the established grade by means of a strike board, and it will then be worked with a wood float in a manner which will thoroughly compact it and provide a surface free from depressions or irregularities of any kind. Excessive working shall be avoided. In no case shall dry cement and sand be sprinkled on the surface. The surface edges of all slabs shall be rounded to a radius of one-half (1/2") inch.
- I. Portland cement concrete sidewalk or banquette pavement shall be divided into blocks of such dimensions, by means of a joiner or grooves, as shown on the Standard Plans or as the DPW Director may designate. Weakened planes shall be formed by a jointing tool or other acceptable means. Weakened planes shall extend into concrete for at least one-quarter (1/4") inch of the depth and shall be approximately one-eighth (1/8") inch wide. Spacing of weakened planes shall be equal to the width of the sidewalk. Transverse expansion joints shall be made at intervals of about ninety (90') feet and constructed in accordance with the standard plans.
- J. All expansion joints shall be carefully made so as to be truly perpendicular to the surface of the sidewalk or banquette pavement and at right angles to the edge of same. The surface of the concrete adjacent to expansion joints shall be finished with a wood float, which is divided through the center and which will permit finishing on both sides of the joint at the same time. An expansion joint shall also be provided adjacent to solid walls of masonry, behind curbs, at intersections and at footlaps. Where posts or poles fall within the limit of the sidewalk or banquette pavement, an expansion joint not less than one-half (1/2") inch in width shall be placed around said posts or poles and filled with joint filler. In the case of expansion joints adjacent to masonry walls, at footlaps and around posts or poles, the joint filler shall not extend above the surfaces of the sidewalk or banquette pavement and any excess filler that so protrudes shall be cut off and made flush with the sidewalk or banquette pavement.
- K. As soon as the finished work has hardened sufficiently to prevent damage, the surface of the walk shall be covered with curing compound. The freshly finished work shall be protected from hot sun and drying winds until it can be covered as above specified. Curing by application of chemicals or some other method of curing may be used upon the approval of the DPW Director. The concrete surface must not be damaged or pitted by raindrops and the Contractor shall provide and use, where necessary, sufficient tarpaulins to completely cover all sections that have been placed within the preceding twelve (12) hours. The Contractor shall erect and maintain suitable barriers to protect the walk from traffic, and any section damaged from traffic or other causes, shall be repaired or replaced by the Contractor at his own expense, in a manner satisfactory to the DPW Director. The walk shall not be opened to traffic until the prescribed curing period has expired.
- L. Portland cement concrete sidewalk or banquette pavement at intersections, including ramps for the handicapped, shall be six (6") inches thick and placed as above specified.

3.3 BRICK SIDEWALK OR BANQUETTE PAVEMENT

- A. Brick sidewalk or banquette pavement shall be of such width, grades or elevations as shown on plans or as may be designated by the DPW Director and laid in the manner herein described and as shown on the standard plan.
- B. The surface of the earth upon which the brick sidewalk or banquette pavement will rest shall be first graded and tamped and otherwise prepared as specified for Portland cement concrete sidewalk or banquette pavement.
- C. Five (5") inches of reinforced concrete foundation having a compressive strength of not less than three thousand (3,000) psi. in twenty-eight (28) days shall be poured and tamped. The

brick shall be laid on a prepared subgrade, a minimum of a three-eighths (3/8") inch setting bed which is composed of one (1) part cement to three (3) parts sand. Bricks shall be in close contact with each other and thoroughly tamped. After tamping, they shall be thoroughly sprinkled and all joints shall at once be completely filled with grout formed of one (1) part Portland cement concrete to three (3) parts sand. Thereafter, clean, sharp sand shall be evenly spread on the surface to a thickness of approximately one-half (1/2") inch. When the grout has been in place for seventy-two (72) hours or longer, this sand shall be removed and may be re-used at the option of the Contractor.

- D. After completion, the brick sidewalk or banquette pavement shall be closed to traffic and not opened until so directed by the DPW Director. The Contractor will be required to barricade and protect the walk in every way as prescribed and required for Portland cement concrete sidewalk or banquette pavement.
- E. Brick sidewalk or banquette pavement will be paid for by the square yard, at the price bid in the proposal for that item, which price shall include grading and all the materials, reinforced concrete foundation, labor, tools, equipment and service employees used in completing the brick sidewalk or banquette pavement in place as herein described.

3.4 RELAYING SIDEWALK OR BANQUETTE PAVEMENT

- A. All sidewalk or banquette pavement relaid shall conform to the requirements herein fixed for new sidewalk or banquette pavement. Where old bricks are not suitable for relaying, they shall be replaced by new brick.
- B. When Portland cement concrete sidewalk or banquette pavement is unavoidably disturbed in executing the work embraced by the specifications, the limits of the area proposed to be disturbed or removed shall be sharply defined by the Contractor with concrete saw made lines and then carefully removed along said lines. Should the surface fracture along irregular lines, a straight line shall be struck and the edge made true. When other sidewalk or banquette pavement is unavoidably disturbed, they shall be restored by the Contractor to the same conditions in which they were before they disturbed them, and for such work, he shall be compensated at the prices bid in the proposal for relaying sidewalk or banquette pavement; no compensation shall be allowed for relaying sidewalk or banquette pavement that has been unnecessarily disturbed.
- C. Relaying sidewalk or banquette pavement shall be paid for by the square yard at the price bid in the proposal for those items, which price shall include all materials, labor, tools, equipment and services employed in taking up the sidewalk or banquette pavement and restoring them to the same condition in which they were before being disturbed, including the grouting of old brick. Exception is made in the case of Portland cement concrete sidewalk or banquette pavement, which price shall include all material, labor, tools, equipment and services employed in taking up and relaying them.

3.5 MEASUREMENT

- A. Sidewalk pavements will be paid for by surface measurements and no deduction will be made for subsurface structures occupying less than five (5) square feet of area. Areas under structures encroaching on public property not paved will not be included in the surface measurement.

END OF SECTION

SECTION 329219 - SEEDING

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The scope of work includes all labor, materials, appliances, tools, equipment, facilities, transportation and services necessary for, and incidental to performing all operations in connection with furnishing, delivery, and installation of seed (also known as "landscaping") complete as shown on the drawings and as specified herein.
- B. The scope of work in this section includes, but is not limited to, the following:
 - 1. Examination.
 - 2. Preparation.
 - 3. Finish grading.
 - 4. Seeding.
 - 5. Hydroseeding.
 - 6. Maintenance and protection.
 - 7. Final inspection.

1.2 CONTRACT DOCUMENTS

- A. Shall consist of specifications and general conditions and the construction drawings. The intent of these documents is to include all labor, materials, and services necessary for the proper execution of the work. The documents are to be considered as one. Whatever is called for by any parts shall be as binding as if called for in all parts.

1.3 RELATED DOCUMENTS AND REFERENCES

- A. Drawings and general provisions of contract including general and supplementary conditions and Division I specifications apply to work of this section.
- B. Related Specification Sections
 - 1. Section 329000 – Planting
 - 2. Section 329113 – Soil Preparation
- C. Meet requirements and recommendations of the applicable portions of the latest editions of Standards listed below:
 - 1. U. S. Department of Agriculture (USDA)
 - 2. Federal Seed Act (FSA)

1.4 DEFINITIONS

- A. Weeds: Includes but is not limited to Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.5 MAINTENANCE DATA

- A. Submit under provisions of Section 017000 (as applicable).
- B. Maintenance Data: At a minimum, Contractor shall submit a weekly report detailing maintenance performed and establishment progress until the turf is accepted.

1.6 QUALITY ASSURANCE

- A. Seeds shall be labeled in accordance with the most current U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act.
- B. Certification: Every bag of seed shall be accompanied by a Certificate of Analysis indicating whether the material is of a single variety, blend or mixture, and the quality.

1.7 QUALIFICATIONS

- A. Contractor shall have a current and valid Louisiana Landscape Horticulturalist License as issued by the Louisiana State Horticultural Commission. The Contractor or Subcontractor shall be required to perform the work specified in the drawings and specifications. All Landscape Horticulturalists shall also have appropriate experience related to the work specified herein.
- B. The Contractor shall provide proof of qualifications for verification.

1.8 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 016500 and Section 016600 as applicable.

1.10 COORDINATION

- A. Coordinate work under this section and other related work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Grass Seed (between March & September): Shall be hybrid Bermuda grass (Cynodon Dactylon) hulled minimum eighty-two (82%) percent by weight of pure live seed, maximum one (1%) percent by weight weed seed.
 - 1. Bermuda Grass (Cynodon dactylon) hybrids; acceptable varieties include Celebration, , TifSport, or Tifway 419.
 - 2. PARKWAYS reserves the right to reject on or after delivery any seed which does not, upon review, meet requirements of these specifications.
 - 3. Certificate of Analysis from each bag of grass seed is to be delivered to the Department of Parks & Parkways at 2829 Gentilly Boulevard, New Orleans, Louisiana, 70122 a minimum of three (3) days prior to installation.

- B. Grass seed (between September & March): Shall be half (50%) Annual Ryegrass, minimum eighty-two (82%) percent by weight of pure live seed, maximum one (1%) percent by weight weed seed. The second half (50%) shall be selected variety of hybrid Bermuda Grass (Cynodon Dactylon) Non Hulled Seed. It shall be eighty two (82%) percent by weight of pure live seed, maximum one (1%) percent by weight weed seed.
1. Bermuda Grass (Cynodon dactylon) hybrids; acceptable varieties include Celebration, TifSport, or Tifway 419.
 2. PARKWAYS reserves the right to reject on or after delivery any seed which does not, upon review, meet requirements of these specifications.
 3. Certificate of Analysis from each bag of grass seed is to be delivered to the Department of Parks and Parkways at 2829 Gentilly Boulevard, New Orleans, Louisiana, 70122 a minimum of three (3) days prior to installation.
- C. Fertilizer: Soil tests shall be made to determine fertility and soil pH in order to prescribe the exact requirements for any amendments. Soil tests shall be conducted by a reputable laboratory and results provided to PARKWAYS.
1. All fertilizers (either granular or liquid) shall be uniform in composition, free flowing and suitable for application with approved equipment.
 2. Fertilizers shall be delivered to the site fully labeled, according to applicable fertilizer laws and shall bear the name, trade name or trademark, and warranty of the producer or manufacturer.
 3. Fertilizer applications shall be determined by soil tests. If soil testing is waived where there is insufficient time for complete soil tests, fertilizer materials that supply the following levels of nutrients can be applied: nitrogen 15 percent, phosphoric acid 5 percent, and soluble potash 10 percent.
- D. Herbicide: The Contractor shall supply the necessary amounts of chemicals for weed control of the project site. Herbicide applications must be approved by PARKWAYS.
- E. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.
- F. Turf Spray Dye (blue): Blazon or Regal Blue Turf colorant (or PARKWAYS approved equal) in one or five gallon containers at a rate of one gallon per gallon of mixture.
- G. Soil fill for fine grading:
1. Refer to Section 329113 for soil preparation as included in project specifications.
 2. Unless otherwise specified, topsoil shall be a loamy sand, sandy loam, clay loam, loam, silt loam, sandy clay loam or other soil approved by PARKWAYS. It shall not have a mixture of subsoil and shall contain no slag, cinders, stones, lumps of soil, sticks, roots, trash or other extraneous materials larger than 1.5 inches (40 mm) in diameter.
 3. If included in topsoil mixture, Mississippi River pump sand must be free of sticks, roots, stones, lumps of clay, debris and other objectionable materials. Spillway dirt will not be accepted.
 4. Topsoil must also be free of weeds and weed seeds.
 5. Unless otherwise specified, all topsoil shall be tested by a reputable laboratory for pH and soluble salts; results must be submitted to PARKWAYS prior to installation.
 6. As needed, pH correction material shall be applied at a rate sufficient to correct the pH to a range of 6.0 to 7.0. Soluble salts shall not be higher than 500 parts per million.

- H. Water Management Gel: Water management gel shall consist of an acrylamide copolymer gel with the ability to retain and release available water to the root zone. The manufacturer's recommended amount the water management gel shall be mixed with the required amount of backfill soil per plant before backfilling.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that prepared soil base is ready to receive the work of this section.
- B. The Contractor shall repair any site deficiencies, such as ruts, depressions, eroded areas, or similar, prior to seeding operations to the satisfaction of PARKWAYS.

3.2 PREPARATION

- A. Apply glyphosate herbicide to kill weeds or existing turf. Allow 7 to 10 days for vegetation to die. Lightly scrape off dead material.
- B. If extensive grading will be needed at the location, remove topsoil and stockpile for replacement after the rough grade is established.
- C. Redistribute or add topsoil back over the rough grade.

3.3 FINISH GRADING

- A. Immediately prior to seeding the bed shall be prepared through use of a tiller, disk, cultipacker, harrow or other approved methods. The soil shall be thoroughly pulverized to a minimum depth of approximately four inches (4").
 - 1. Till in soil amendments and fertilizer such as phosphorous, potash, lime or sulfur as recommended by the soil sample results and smooth by means of raking or other approved methods. Fertilizers shall be distributed uniformly over entire areas to be seeded.
- B. The finished surface shall be smooth, finely textured, free of all sticks, debris, rubbish, etc. and shall conform to the lines and grades indicated on the drawings and/or as directed by PARKWAYS. All humps, depressions or other irregularities shall be corrected prior to seeding.
- C. Grade changes within the dripline of trees shall not exceed two inches.

3.4 SEEDING

- A. On the same day that the finish grading operations are performed (with no rain between operations) and after approval by PARKWAYS of the seed bed, the hulled grass seed shall be applied at the rate of 1 to 2 pounds each of the specified seed types per 1,000 square feet of seed bed by means of an approved mechanical seed spreader which will provide a depth of one-eighth inch ($\frac{1}{8}$ "). For unhulled grass seed, the seeding rate must be increased proportionally.
- B. Immediately after seeding, roll seeded areas to press seed into the ground with a hand roller weighing not less than 150 pounds or more than 200 pounds. Care shall be exercised to prevent foot prints or other disturbances to the finished surface.

3.5 HYDROSEEDING

- A. Hydroseeding shall consist of mixing and applying seed, commercial fertilizer, water management gel, and polyacrylamide tackifier with wood fiber and water.
- B. Hydroseeding shall occur on the same day that the finish grading operations are performed (with no rain between operations).
- C. Seed and fertilizer shall be uniformly spread over the area at the rates specified in Table (A). Paper or wood fiber shall be mixed and applied with the seed in accordance with the manufacturer's recommendations and as approved by PARKWAYS. The fiber shall be in addition to straw or mulch when straw or mulch is specified. The application rate for pelletinoculated seed shall be determined using the seed mass exclusive of inoculant materials. The materials and the quantities thereof to be mixed with water will be specified. The quantity of water shall be as needed for application.

Table A:

Type Fertilizer	Pounds per Acre	Kilogram Per Hectare
8-8-8	1000	1120
12-12-12	667	748
13-13-13	615	689
16-16-16	500	560

- D. Mixing of materials for application with hydro-seeding equipment shall be performed in a tank with a built-in continuous agitation system of sufficient operating capacity to produce a homogeneous mixture and a discharge system which will apply the mixture at a continuous and uniform rate. The tank shall have a minimum capacity of 962 gallons (3700 L). PARKWAYS may authorize use of equipment of smaller capacity if it is demonstrated that the equipment is capable of performing all operations satisfactorily.
- E. A dispersing agent may be added to the mixture provided the contractor furnishes evidence that the additive will not affect germination. Any material considered detrimental, as determined by PARKWAYS, shall not be used.
- F. Any mixture containing polyacrylamide tackifier shall not be applied during any rainy weather or when soil temperatures are below 41 degrees F or if the wind speed is above 20 miles per hour. Pedestrian traffic or equipment shall not be permitted to enter areas where hydro-seeding has been applied.

3.6 MAINTENANCE AND PROTECTION

- A. Watering shall be required for all areas which have been seeded except when natural precipitation has provided the necessary moisture as determined by PARKWAYS. Watering shall be done in a manner which will prevent erosion due to the application of excessive quantities, and the watering equipment shall be of a type that will prevent damage to the finished surface. A minimum amount of rainfall would be two (2) one inch (1") rainfalls per week. If more water is needed it is the responsibility of the Contractor to provide it.
- B. The seeded areas shall be protected against traffic or other use by placing warning signs of a type approved by PARKWAYS on the various areas where seeding has been completed or by other means, such as protective fencing.

- C. The Contractor shall produce dense, vigorous, well established lawn and shall maintain lawn areas until final acceptance of the work by PARKWAYS.
 - 1. Maintenance shall include, but not be limited to the preparation and reseeding or resodding of any bare areas, proper watering refilling of rainwashed gullies and rutted areas, fertilizing and mowing.
 - 2. Maintain turf at 1.5 to 2 inches in height. At least three (3) mowings shall be completed before the work will be accepted.
 - 3. Two to three weeks after emergence, make nitrogen applications every two to three weeks until the turf has one hundred percent (100%) coverage.
 - a. Apply the equivalent of one half (0.5) to one (1) pound of nitrogen per one thousand square feet (1000 s.f.).
 - 4. Any areas which fail to show a uniform stand of grass shall be reworked and reseeded at the Contractor's expense with the same seed as originally used thereon, and such re-seeding shall be replaced until all required areas are covered with a satisfactory stand of grass.

3.7 FINAL INSPECTION

- A. Inspection of work to determine its final acceptance will be made by PARKWAYS. No plant material, turf included, will be accepted unless it is alive and healthy and all related work conforms to the drawings and specifications.
- B. Should any portion of the work be unacceptable, Contractor shall make all work acceptable and request a re-inspection by PARKWAYS, within five (5) business days.
- C. The Contractor will be notified by letter of acceptance within five (5) business days after reinspection, should the latter be necessary.
- D. A satisfactory stand of grass is defined as a cover of living weed free grass in which gaps larger than four (4) inches do not occur at the time of acceptance by PARKWAYS.

3.8 PAYMENT

- A. No separate measurement or payment will be made for services or products related to all seeding. All costs in connection to this section shall be included in the contract prices for the items of work to which the work is incidental.

END OF SECTION 329219

SECTION 323113 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Chain-link fences.
 - 2. Swing gates.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project Site at a location approved by the owner.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For each type of fence and gate assembly.
 - 1. Include plans, elevations, sections, details, and attachments to other work.
- C. Samples: For each exposed product and for each color and texture specified.
- D. Delegated-Design Submittal: For structural performance of chain-link fence and gate frameworks, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS

- A. Product certificates.
- B. Product test reports.
- C. Sample warranty.

1.5 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design chain-link fence and gate frameworks.
- B. Structural Performance: Chain-link fence and gate frameworks shall withstand the design wind loads and stresses for fence height(s) and under exposure conditions indicated according to ASCE/SEI 7:
 - 1. Design Wind Load: 146 VMPH.
 - a. Minimum Post Size: Determine according to ASTM F 1043 for post spacing not to exceed 8 feet for Material Group IA, ASTM F 1043, Schedule 40 steel pipe Group IC, electric-resistance-welded round steel pipe.
 - b. Minimum Post Size and Maximum Spacing: Determine according to CLFMI WLG 2445, based on mesh size and pattern specified.

2.2 CHAIN-LINK FENCE FABRIC

- A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to "CLFMI Product Manual" and requirements indicated below:
 - 1. Fabric Height: Insert dimension As indicated on Drawings.
 - 2. Steel Wire for Fabric: Wire diameter of 0.192 inch.
 - a. Mesh Size: 2-1/8 inches 2 inches 1-3/4 inches 1 inch Insert dimension.
 - b. Aluminum-Coated Fabric: ASTM A 491, Type I, 0.40 oz./sq. ft. 0.35 oz./sq. ft. 0.30 oz./sq. ft..
 - c. Polymer-Coated Fabric: ASTM F 668, Class 1 over aluminum zinc Zn-5-Al-MM-alloy-coated steel wire.
 - 1) Color: Black, according to ASTM F 934.
 - d. Coat selvage ends of metallic-coated fabric before the weaving process with manufacturer's standard clear protective coating.
 - 3. Selvage: Knuckled at both selvages Twisted top and knuckled bottom.

2.3 FENCE FRAMEWORK

- A. Posts and Rails as indicated in drawings: ASTM F 1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 or ASTM F 1083 based on the following:
 - 1. Fence Height: 120 inches.
 - 2. Heavy-Industrial-Strength Material: Group IA, round steel pipe, Schedule 40 Group IC, round steel pipe.

- a. Line Post: 3 inch diameter.
 - b. End, Corner, and Pull Posts: 3 inch diameter.
- 3. Horizontal Framework Members: Intermediate top bottom rails according to ASTM F 1043.
- 4. Brace Rails: ASTM F 1043.
- 5. Metallic Coating for Steel Framework:
 - a. External, Type B zinc with organic overcoat and internal, Type D zinc-pigmented coating.
- 6. Polymer coating over metallic coating.
 - a. Color: Match chain-link fabric Black, according to ASTM F 934.

2.4 TENSION WIRE

- A. Polymer-Coated Steel Wire: 0.177-inch- diameter, tension wire according to ASTM F 1664, Class 1 over aluminum zinc Zn-5-Al-MM-alloy-coated steel wire.
 - 1. Color: Match chain-link fabric Black, according to ASTM F 934.

2.5 SWING GATES

- A. General: ASTM F 900 for gate posts and single double swing gate types.
 - 1. Gate Leaf Width: As indicated on drawings.
 - 2. Framework Member Sizes and Strength: As indicated on drawings.
- B. Pipe and Tubing:
 - 1. Zinc-Coated Steel: ASTM F 1043 and ASTM F 1083; protective coating and finish to match fence framework manufacturer's standard protective coating and finish Insert finish. Match polymer coating on fence posts.
 - 2. Aluminum: ASTM B 429/B 429M; mill manufacturer's standard Insert finish finish.
 - 3. Gate Posts: Round tubular steel.
 - 4. Gate Frames and Bracing: Round tubular steel.
- C. Frame Corner Construction: Welded assembled with corner fittings.
- D. Extended Gate Posts and Frame Members: Fabricate gate posts and frame end members to extend 12 inches as indicated Insert dimension above top of chain-link fabric at both ends of gate frame to attach barbed wire assemblies.
- E. Hardware:
 - 1. Hinges: 180-degree inward 180-degree outward; refer to drawings for swing.
 - 2. Latch: Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
 - 3. Lock: ADA accessible swing gate lock kit with tension bands. Provide egress function; key locks to UNO's keying system.
 - 4. Padlock and Chain: Insert requirements.
 - 5. Closer: Self cwsing hardware.

2.6 FITTINGS

- A. Provide fittings according to ASTM F 626.
- B. Finish:
 - 1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz./sq. ft. of zinc.
 - a. Polymer coating over metallic coating.

2.7 GROUT AND ANCHORING CEMENT

- A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout, recommended in writing by manufacturer, for exterior applications.
- B. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating, and that is recommended in writing by manufacturer for exterior applications.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation before final grading is completed unless otherwise permitted by Architect.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 CHAIN-LINK FENCE INSTALLATION

- A. Install chain-link fencing according to ASTM F 567 and more stringent requirements specified.
- B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

- a. Exposed Concrete: Extend 2 inches above grade; shape and smooth to shed water.
 - b. Concealed Concrete: Place top of concrete 2 inches below grade to allow covering with surface material.
 - c. Posts Set into Sleeves in Concrete: Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts are inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout or anchoring cement, mixed and placed according to anchoring material manufacturer's written instructions. Finish anchorage joint to slope away from post to drain water.
 - d. Posts Set into Holes in Concrete: Form or core drill holes not less than 5 inches deep and 3/4 inch larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed according to anchoring material manufacturer's written instructions. Finish anchorage joint to slope away from post to drain water.
- D. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.
- E. Line Posts: Space line posts uniformly at 8 feet o.c.
- F. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch- diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:
- 1. Extended along Top and Bottom of fence fabric.
- G. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 2-inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

3.4 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware and other moving parts.

END OF SECTION

SECTION 323119 - DECORATIVE METAL FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Decorative aluminum fences.
 - 2. Swing gates.
 - 3. Gate operators, including controls.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site at a location approved by owner.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For fencing and gates.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Include diagrams for power, signal, and control wiring.
- C. Samples: For each fence material and for each color specified.

1.4 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.
- B. Product test reports.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Fabricator of products.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Wind Loading: Comply with ASCE/SEI 7 requirements for fence height, wind exposure, design wind speed, and design wind pressure.
- B. Lightning-Protection System: Maximum grounding-resistance value of 25 ohms under normal dry conditions.

2.2 DECORATIVE ALUMINUM FENCES

- A. Decorative Aluminum Fences: Fences made from aluminum extrusions.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Basis of Design, Echelon II, Industrial Aluminum Fence: Ameristar Fence Products; an ASSA ABLOY company.
 - b. Delair Group, L.L.C.
 - c. East & West Alum Craft Ltd.
 - d. Elegant Aluminum Products, Inc.
 - e. Elite Fence Products, Inc.
 - f. Jerith Manufacturing Company, Inc.
 - g. Master Halco.
 - h. Merchants Metals.
 - i. Superior Aluminum Products, Inc.
 - j. Tek-Rail.
 - k. Ultra Aluminum Mfg., Inc.
 - l. Virginia Railing and Gates, LLC.
 - m. Prior Approved Equal.
- B. Posts: Tube sizes as shown on drawings at .125 inch wall thickness.
- C. Post Caps: Aluminum castings with round ball finial.
- D. Rails: Extruded-aluminum channels, 1-3/4 by 1-3/4 inches, with 0.100-inch- thick sidewalls.
- E. Pickets: Extruded-aluminum tubes, 1 inch square, with 0.062-inch wall thickness.
 - 1. Picket Spacing: match existing fence picket spacing from existing baseball facility.
- F. Fasteners: Manufacturer's standard tamperproof, corrosion-resistant, color-coated fasteners matching fence components with resilient polymer washers.
- G. Fabrication: Assemble fences into sections by fastening pickets to rails.
- H. Finish: Baked enamel or powder coating.

2.3 SWING GATES

- A. Aluminum Frames and Bracing: Fabricate members from square extruded-aluminum tubes 2-1/2 by 2-1/2 inches with 0.154-inch wall thickness.
- B. Hardware: Latches permitting operation from both sides of gate, hinges, and keepers for each gate leaf more than 5 feet wide. Provide center gate stops and cane bolts for pairs of gates. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate. Refer to drawings for details.
 - 1. As shown on Drawings.
- C. Galvanizing: For items other than hardware that are indicated to be galvanized, hot-dip galvanize to comply with ASTM A 123/A 123M. For hardware items, hot-dip galvanize to comply with ASTM A 153/A 153M.
- D. Metallic-Coated-Steel Finish: High-performance coating Galvanized finish.
- E. Steel Finish: Primed Shop painted High-performance coating.
- F. Aluminum Finish: Baked enamel or powder coating.

2.4 ALUMINUM

- A. Extrusions: ASTM B 221, Alloy 6063-T5.
- B. Tubing: ASTM B 429/B 429M, Alloy 6063-T6.
- C. Castings: ASTM B 26/B 26M, Alloy A356.0-T6.

2.5 MISCELLANEOUS MATERIALS

- A. Concrete: Normal-weight, air-entrained, ready-mix concrete complying with requirements in Section 033000 "Cast-in-Place Concrete" with a minimum 28-day compressive strength of 3000 psi, 3-inch slump, and 1-inch maximum aggregate size[**or dry, packaged, normal-weight concrete mix complying with ASTM C 387/C 387M mixed with potable water according to manufacturer's written instructions**].

2.6 GROUNDING MATERIALS

- A. Comply with requirements of Section 260526 "Grounding and Bonding for Electrical Systems."
- B. Grounding Conductors: Size as indicated on Drawings. Bare, solid wire for No. 6 AWG and smaller; stranded wire for No. 4 AWG and larger.
 - 1. Material above Finished Grade: Copper Aluminum.
 - 2. Material on or below Finished Grade: Copper.
- C. Grounding Connectors and Grounding Rods: Comply with UL 467.

2.7 ALUMINUM FINISHES

- A. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 2 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
 - 1. Color and Gloss: As indicated by manufacturer's designations Match Architect's sample As selected by Architect from manufacturer's full range Insert color and gloss.

PART 3 - EXECUTION

3.1 DECORATIVE FENCE INSTALLATION

- A. Install fences according to manufacturer's written instructions.
- B. Install fences by setting posts as indicated and fastening to posts. Peen threads of bolts after assembly to prevent removal.
- C. Post Excavation: Drill or hand-excavate holes for posts in firm, undisturbed soil. Excavate holes to a diameter of not less than 4 times post size and a depth of not less than 24 inches plus 3 inches for each foot or fraction of a foot that fence height exceeds 4 feet.
- D. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around **posts** and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - 3. Posts Set in Concrete: Extend post to within 6 inches of specified excavation depth, but not closer than 3 inches to bottom of concrete.
 - 4. Space posts uniformly as shown on drawings.

3.2 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.3 GROUNDING AND BONDING

- A. Comply with Section 260526 "Grounding and Bonding for Electrical Systems."
- B. Fence Grounding: Install at maximum intervals of 1500 feet except as follows:
 - 1. Fences within 100 Feet of Buildings, Structures, Walkways, and Roadways: Ground at maximum intervals of 750 feet.
 - a. Gates and Other Fence Openings: Ground fence on each side of opening.

- C. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at grounding location.
- D. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.
- E. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact are galvanically compatible.
- F. Bonding to Lightning-Protection System: If fence terminates at lightning-protected building or structure, ground the fence and bond the fence grounding conductor to lightning-protection down conductor or lightning-protection grounding conductor, complying with NFPA 780.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
 - 1. Grounding-Resistance Tests: Subject completed grounding system to a megger test at each grounding location. Measure grounding resistance not less than two full days after last trace of precipitation, without soil having been moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural grounding resistance. Perform tests by two-point method according to IEEE 81.

END OF SECTION

DIVISION 33 – UTILITIES

SECTION 334000 – DRAINS AND CULVERTS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Culverts and storm drains shall conform to all of the requirements of the General Specifications and Standard Plans of the Sewerage & Water Board (S&WB) of New Orleans (the latest revision) except as noted

1.2 GENERAL REQUIREMENTS

- A. The Contractor shall furnish all materials, equipment, labor and supervision to remove the existing deteriorated main, install new mains and fittings, including appurtenances such as tie-ins to existing system, lumber foundation, bedding, backfilling, necessary dewatering and by-passing during the execution of this contract.
- B. All workmanship, material and tests shall conform with Section E of the General Specifications of the S&WB and S&WB Standard Drawing No. 7260-D except as noted herein.
- C. The Contractor shall notify the Chief of Network Engineering of the S&WB in writing not less than three or more than ten working days in advance of starting the job so as to schedule the inspection of the work. Failure to do so prior to starting work will result in the Contractor being required to expose the bedding on all pipe previously installed.
- D. The Contractor may use more than one crew in performing work in various sections of a system at a given time, provided he has the approval of the DPW Director.
- E. The Contractor performing work under this contract shall be required to coordinate his operations with the S&WB and other utilities prior to making any excavation so that the location of their services can be identified. The Contractor shall exercise caution in making excavations to avoid damage to these services and other utilities.
- F. The Contractor will be furnished a list of the locations of water and sewer house connections. It will be the Contractor's responsibility to verify the location of these so as to avoid damage. Furnishing this information should not be construed as a waiver of the Contractor's liability, but rather an attempt on the part of the S&WB to minimize the Contractor's hazard. The existing house connections submitted in the list are from S&WB records and could vary from the actual location. Any damage to the existing water, sewer and drain connections resulting from negligence shall be repaired by the S&WB at the expense of the Contractor. The Contractor is also responsible for damage to other utilities and the property of others.
- G. Existing drain house connections shall be tied into the new mains. No new drain house services shall be installed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Where the entire drain line is replaced between manholes, the drain pipe shall be reinforced concrete pipe conforming to Section C of the General Specifications of the S&WB and to the Standard City Plans, unless otherwise noted. Installation of drain lines, including bedding and foundation lumber, shall be in accordance with S&WB Standard Drawings No. D-3809, No. D-3810, No. D-3933 and D-3934.
- B. The new drain lines and house connections, where required, shall be installed at the existing elevations and locations indicated, unless changed by the DPW Director. The Contractor shall schedule his work so that the drain lines and catch basin connections between two manholes are completed before moving to another location (this will minimize the spillage of storm water into an open trench). The Contractor shall isolate the block where the work is in progress by plugging the upstream and downstream manholes. Should the storm water build up to within three feet of the top of the upstream manhole, or if directed by the DPW Director, the Contractor shall pump the water to the downstream manhole or to a nearby catch basin, through bypass pumping. No mains or lines shall be left open overnight; a temporary tie-in shall be made between the end of the new main and the existing, and plugs at manholes shall be removed so as to allow flow to continue until work is resumed.
- C. Backfill material shall be pumped sand and shall be placed at or near optimum moisture content and compacted according to one of the following procedures:
 - 1. Backfill material shall be placed in layers not to exceed 12 inches. Each layer shall be compacted to a minimum of 95 percent of maximum density using approved mechanical compaction equipment, or:
 - 2. Backfill material may be placed in layers not exceeding 3 feet by thoroughly flooding and compacting each layer to a minimum of 95 percent maximum density at or near optimum moisture content using approved mechanical compaction equipment, prior to placing a subsequent layer. During placement, backfill materials shall be thoroughly saturated with water and satisfactory drainage of materials shall be provided. The above backfill material compaction procedures shall be applied also for any service connections and point repairs.
- D. Filter cloth around the joints of drain lines shall be non-woven conforming to LaDOTD Specification Section 1019, class B.

3.2 DRAIN HOUSE CONNECTIONS

- A. All existing drain house connections shall be removed and replaced with new PVC pipe from the new drain line to one (1') foot behind the curb where it will be tied to the existing drain house connection pipe.
- B. The need for replacing existing drain house connections from the back of the curb to the property line (or any point between) shall be determined by the S&WB after field inspection or as indicated on the drawings. The new pipe will be tied to the existing pipe at that point.
- C. If the existing drain line is being removed and not replaced, or if the S&WB determines it is necessary, an alternate method may be utilized by connecting the existing drain house connections

into a PVC collector line located behind the curb and tied into the catch basins or manholes, as directed by the S&WB.

- D. The new house connection pipe may be connected to the new reinforced concrete pipe by drilling the concrete pipe and by using a rubber boot (Kor-n-Seal boot or approved equal) or sand impregnated PVC bell grouted in the concrete pipe, to connect the new PVC pipe.
- E. No bends greater than 45 degrees will be allowed in drain house connection pipe.
- F. No drain house connection shall be installed in the corners of catch basins. All connections shall be in the side or back of the catch basins.
- G. All pipes and fittings shall be approved by the S&WB. The connection of any two dissimilar house connection materials shall be accomplished by the installation of a "No-Hub" coupling consisting of a neoprene sleeve and bushing adapter and two stainless steel bands. The coupling shall be manufactured in strict accordance with Fernco specification, or approved equal.
- H. Where it is necessary to connect the drains to existing manholes, catch basins, or canals, the existing short bell pieces remaining in the wall of the structure shall be inspected. If in bad condition, the short bell pieces shall be broken out and new short bell pieces inserted to the full thickness of the walls and permanently grouted (see S&WB Dwg. 6178-B-6). The annular space between the concrete pipe and the wall of the structure shall be grouted with a type three, high early strength cement, or quick setting EMBECO or similar material.
- I. If a PVC pipe is to be connected to a manhole or other concrete or brick drainage structure, the Contractor shall use a sand-impregnated PVC stub, grouted with cement grout as specified above, for the manhole connection.
- J. Drain house connections shall be backfilled as described herein for drain lines.

3.3 POINT REPAIRS OF EXISTING DRAIN LINES

- A. Where the existing drain line has to be removed and replaced with new concrete pipe, said pipe fittings shall conform with Section E of the S&WB General Specifications. Bedding and foundation lumber for the drain line shall conform with S&WB drawings No. D-3809, No. D-3910, No. D-3933 and No. D-3934. Bedding and foundation lumber shall extend under the existing pipe for a distance of not less than 12 inches from the end of pipe to insure proper bedding under the coupling.
- B. The Contractor shall make point repairs to the lines at specific locations shown on the drawings and as listed in the schedule of bid prices. Point repairs shall be made by dry type and shall conform to Section XII of NASSCO (National Association of Sewer Service Companies). The Contractor shall make an excavation to expose a basic "ten (10) linear feet" of main per point repair. Any additional footage of repair beyond the ten-foot minimum for each point repair shall be approved by the DPW Director or as indicated on the Drawings as "Beyond point repair". The Contractor is required to have all materials and equipment on hand prior to the start of excavation so that there will be a minimum of inconvenience to the residents. All trenches must be backfilled at the end of the day. Backfill will be in accordance with the same as described herein for new drain lines.
- C. For drain point repairs, and for all other drain repairs, the connection of any two dissimilar materials shall be accomplished by the installation of a "no-hub" coupling consisting of a neoprene sleeve and bushing adapter, two stainless steel bands, and stainless steel screws. The coupling

shall be manufactured in strict accordance with Fernco coupling specifications, or approved equal.

3.4 INSPECTION

- A. At the completion of the point repair or replacement of mains between manholes, and prior to final acceptance, the S&WB may inspect the mains with a remote controlled television unit or by visual inspection of large lines. The Contractor will be required to repair, at his expense and in an approved manner, all defects in his workmanship disclosed by these tests and inspections before final acceptance.

3.5 AS-BUILT DRAWINGS

- A. The Contractor shall furnish a set of "as built" drawings upon completion of the work and prior to final inspection. These drawings shall be a legibly marked set of prints of the Contract Drawings, revised to show clearly all field changes.

END OF SECTION

DIVISION 33 – UTILITIES

SECTION 334000.1 – HYDRAWAY DRAINAGE SYSTEM

HYDRAWAY 2000

SECTION 02639 SUBDRAINAGE

PART 1: GENERAL

1.01 RELATED WORK

Review Contract Documents for requirements that affect work of this section. Specification sections that directly relate to work of this section include, but are not limited to:

Section 02315 - Excavation & Backfill

Section 02630 - Storm Drainage Pipe

SYSTEM DESCRIPTION

The subsurface drain system should consist of the Hydraway™ geocomposite drain and outlet pipes of the type, size and dimensions in accordance with these specifications and project plans, or as directed by the project engineer. The drain consists of a geotextile filter fabric heat fusion bonded to an internal high density polyethylene (HDPE) core. The drain should be lightweight, flexible, have minimal “memory” when placed in horizontal position and sufficiently durable to withstand automated and/or manual installation procedures.

PART 2: PRODUCTS

2.01 GEOCOMPOSITE SUBSURFACE DRAIN SYSTEM

ACCEPTABLE MANUFACTURERS

SUBSURFACE DRAIN:

Hydraway 2000 manufactured by: Intech Anchoring Systems, Caseyville, IL 62232

Telephone: 800-223-7015 Fax: 618-398-5722, Email: info@hydraway.net

COMPONENTS

The drain consists of a geotextile filter fabric heat fusion bonded to an internal high density polyethylene (HDPE) core. The drain should be lightweight, flexible, and sufficiently durable to withstand automated and/or manual installation procedures.

See Exhibit A on detail of construction of drain.

1. Core: High Density Polyethylene (HDPE)
 - a. Length: 150 to 550 feet
 - b. Widths: 6, 12, 18 or 24 inches
 - c. Depth: 1” minimum
2. Geotextile Fabric: Tencate - Mirafi® 140N
 - a. 4.5 ounce minimum
 - b. Heat fusion bonded to the core
3. Accessories:
 - a. Couplers, ends, outlets adapters as required and recommended by the manufacturer.
4. Geocomposite subsurface drain system shall meet the following ASTM standards as a minimum.

ASTM STANDARDS

CORE:

ASTM D-1621 Standard Test Methods for Compressive Properties of Rigid Cellular Plastics

ASTM D-4716 Standard Method for Constant Head Hydraulic Flow Transmissivity (in-plane flow) of Geotextiles and Geotextile Related Products

ASTM D-1876 Standard Test Method for Peel Resistance of Adhesives (T-Peel Test)

TABLE 1 – CORE MATERIAL REQUIREMENTS

PRODUCT	AVERAGE TEST VALUE	ASTM TEST METHOD
Compressive Strength at maximum deflection of 20%	11,400 lbs/ft ²	D1621
Flow Rate at 10 psi and gradient of 0.1	21 gpm/ft width	D4716
Peel Strength (Fabric to Core)	50 lbs/ft width	D1876

GEOTEXTILE FABRIC (4.5 oz Tencate-Mirafi® 140N):

ASTM D-4632 Standard Test Method for Grab Breaking Load and Elongation of Textiles

ASTM D-4491 Standard Test Method for Water Permeability of Geotextiles by Permittivity

ASTM D-4751 Standard Test Method for Determining Apparent Opening Size of a Geotextile

TABLE 2 – GEOTEXTILE FABRIC REQUIREMENTS

PRODUCT	AVERAGE TEST VALUE	ASTM TEST METHOD
Elongation	50 %	D4632
Grab Tensile	120 lbs	D4632
Permeability	135 gal/min/ft ²	D4491
Apparent Opening Size	70 U.S. Std. Sieve	D4751

PART 3: EXECUTION

3.03 INSTALLATION / QUALITY ASSURANCE

1. INSTALLATION EQUIPMENT

All equipment necessary and required for the proper construction of the drain system should be in working condition and approved by the engineer. The contractor should also provide equipment to obtain proper compaction as needed.

2. INSTALLATION AND BACKFILL

A. Geocomposite Drain

Vertical installation:

In vertical installation of geocomposite for natural turf fields or highway edge drains the contractor should do all necessary excavation at the location and depth shown on the plans. The trench width for Hydaway shall be 3" to 6" at a depth that is

specified by the by the designing engineer. The engineer should determine the depth of removal needed and type of clean granular backfill to be used.

The geocomposite drain shall connect to the outlet/collector pipes or may daylight for discharge by gravity. Fittings shall connect the geocomposite drain to the PVC pipe in accordance with the drain manufacture's recommendations at locations specified by the project plans.

The amount of trench to be excavated should not exceed the amount that can be installed and backfilled in one working day.

Horizontal application:

In Horizontal applications geocomposite should be placed "points down" so the grid backing is at the top, this helps to protect the drain during the initial placement and compaction of the clean rock or clean free flowing backfill.

Until the backfill is placed on the drain, ALL wheeled traffic should be kept OFF the drain lines. Once a minimum of 3- 4 inches of cover is placed, then TRACKED equipment can drive over the Hydraway lines. Tracked equipment will NOT damage the Hydraway lines as long as a minimum of 4 inches of cover is provided.

After 6 to 9 inches of cover is placed, wheeled equipment can be driven over the drain locations.

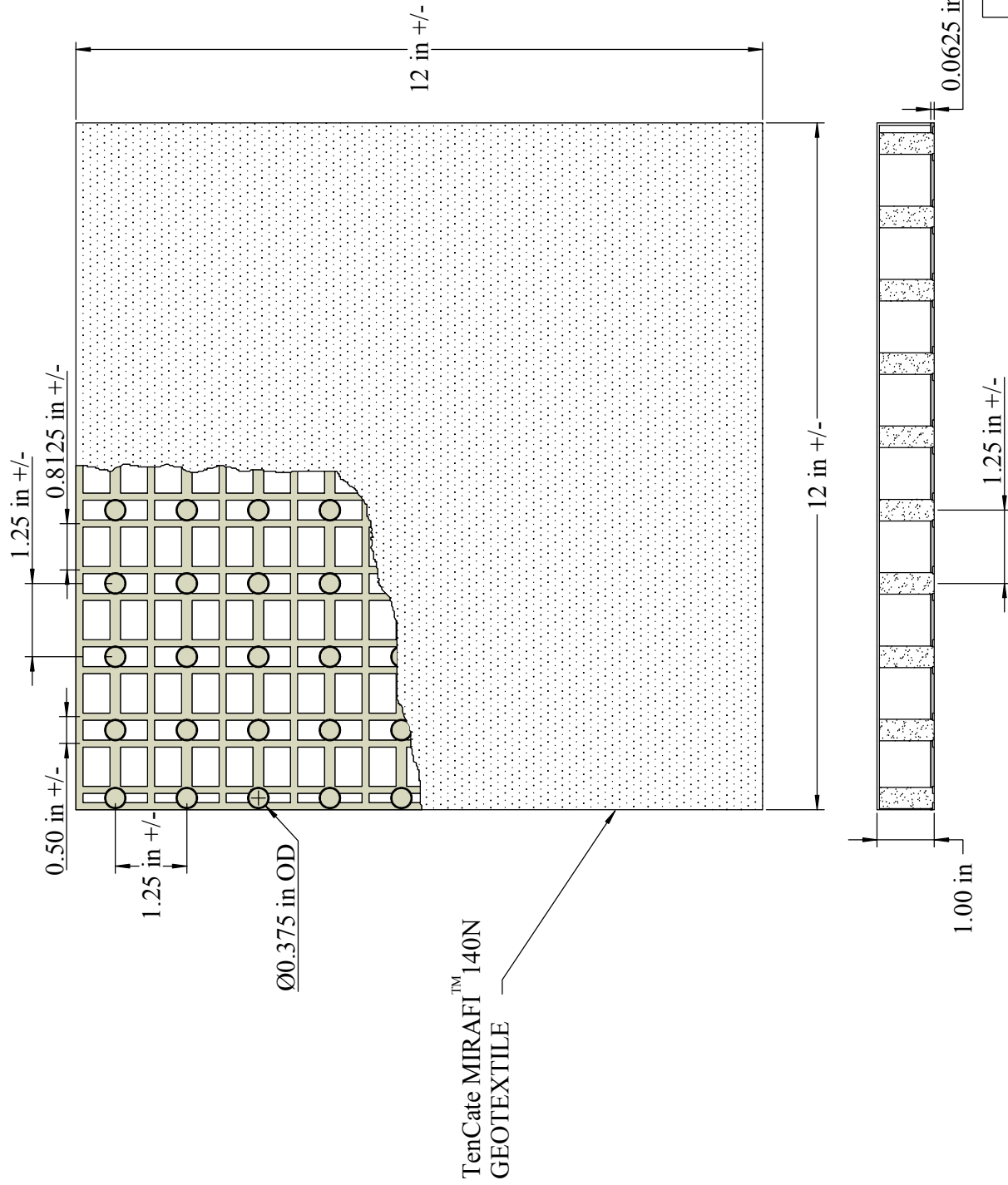
All necessary splices are to be made with connections furnished by the manufacturer or approved by the engineer in accordance with the project specifications. The geocomposite drain and connectors should be inspected prior to backfill being placed. If the drain is found to be out of alignment or damaged, it should be removed and replaced as directed by the engineer.

3. SHIPPING AND STORAGE

The Hydraway Drainage System is packaged and shipped in an opaque wrap that protects the material from dust and ultraviolet light. The manufacturer recommends that the material remain wrapped or protected from exposure to ultraviolet light and from contamination until it is installed. Hydraway shall be protected from temperatures greater than 140°F.

Each roll, or shipping unit, of drain shall be marked with a tag, or other identification label showing the product type and number and the date of manufacture.

END OF SECTION



8250 BUNKUM ROAD, CASEYVILLE, ILLINOIS 62232
 PHONE: 1-800-223-7015 FAX: 1-618-398-5722

HYDRAWAY DETAILS

REVISION - 0 DRAWN BY AJC 2/9/09

END OF SECTION

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TENNIS COURT CONVERSION TO BEACH VOLLEYBALL - EAST CAMPUS

6801 Franklin Ave, New Orleans, LA 70122

BID DOCUMENTS

ARCHITECT

Holly & Smith Architects, APAC
2302 Magazine Street
New Orleans, LA 70130
504.585.1315

CIVIL / STRUCTURAL ENGINEER

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New Orleans, LA 70115
504.533.8644

OWNER

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TENNIS COURT CONVERSION TO BEACH
VOLLEYBALL - EAST CAMPUS

6801 Franklin Ave, New Orleans, LA 70122

NO.	DESCRIPTION	DATE
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PROJECT NO.	21048
PHASE	CD
DATE	12.10.21
PROJECT MANAGER	WF
QUALITY CONTROL	RS

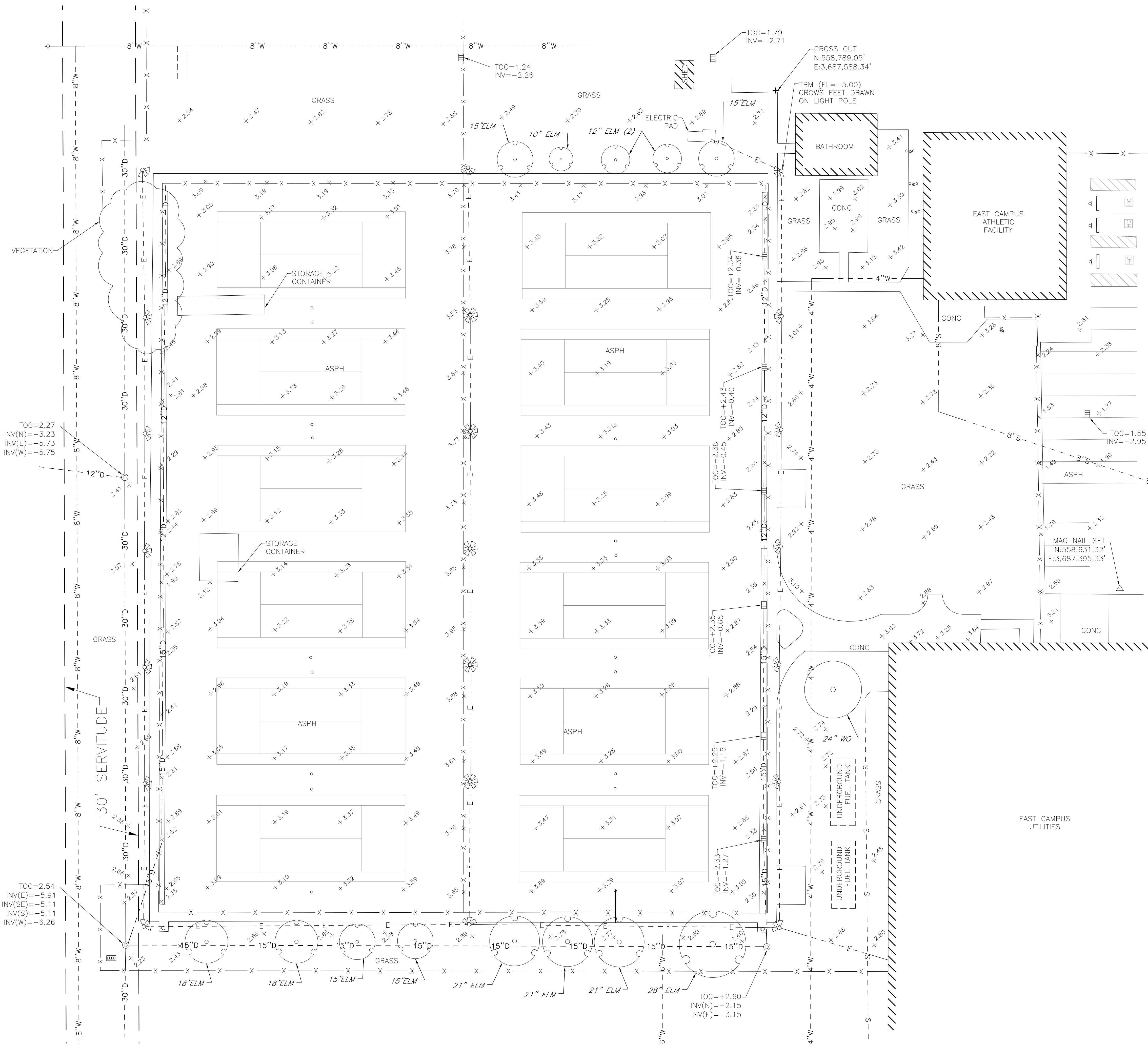
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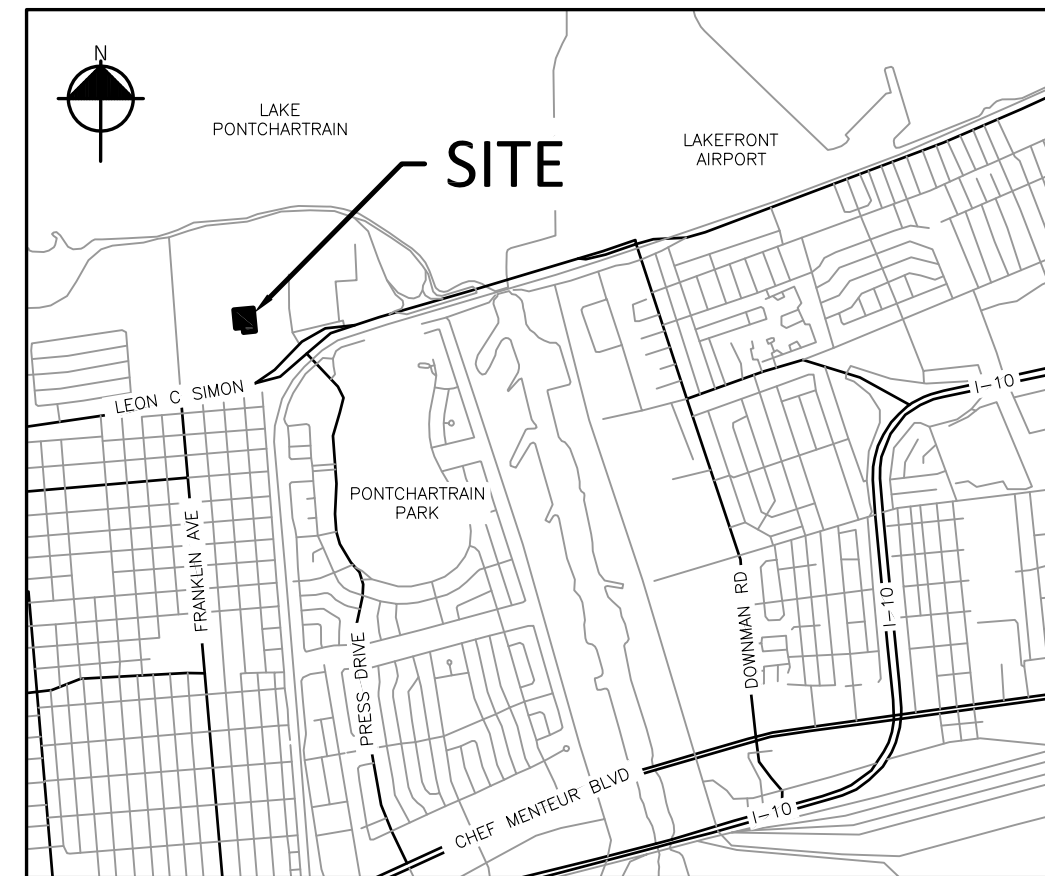
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




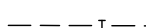

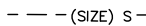

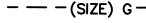

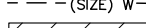

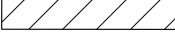










SCALE: 1"=40' (12X18)
SCALE: 1"=20' (24X36)



VICINITY MAP
NOT TO SCALE

TOPOGRAPHIC SURVEY OF A PORTION OF THE EAST CAMPUS UNIVERSITY OF NEW ORLEANS THIRD DISTRICT CITY OF NEW ORLEANS

LEGEND			
	- STADIUM LIGHTING		- OVERHEAD ELEC.
	- WATER METER		- DRAIN LINE
	- SEWER CLEANOUT		- UG TELEPHONE
	- DRAIN MANHOLE		- SEWER LINE
	- DROP INLET, SQUARE		- GAS LINE
	- POST		- WATER LINE
	- SIGN, POLE MOUNTED		- BUILDING
	- SPOT ELEVATION		- CHINESE ELM
	- CROSS SET		
	- MAG NAIL SET		
	- ELECTRIC BOX		- WATER OAK
	- WATER FOUNTAIN		
	- FIRE HYDRANT		

PREPARED FOR
UNIVERSITY OF NEW
ORLEANS.

I HEREBY CERTIFY THIS
PLAT REPRESENTS AN
ACTUAL GROUND SURVEY
MADE BY ME OR UNDER
MY DIRECT SUPERVISION.

- NOTES:
1. THE LOCATIONS OF UNDERGROUND AND OTHER NONVISIBLE UTILITIES SHOWN HEREON HAVE BEEN PLOTTED BASED UPON DATA EITHER FURNISHED BY THE AGENCIES CONTROLLING SUCH DATA AND/OR OBTAINED FROM RECORDS MADE AVAILABLE TO US BY THE AGENCIES CONTROLLING SUCH RECORDS. WHERE FOUND, THE SURFACE FEATURES OF UTILITIES ARE SHOWN. THE ACTUAL NONVISIBLE LOCATIONS MAY VARY FROM THOSE SHOWN HEREON. EACH AGENCY SHOULD BE CONTACTED RELATIVE TO THE PRECISE LOCATION OF ITS UNDERGROUND INSTALLATIONS PRIOR TO ANY RELIANCE UPON THE ACCURACY OF SUCH LOCATIONS SHOWN HEREON. PRIOR TO EXCAVATION AND DIGGING CALL LA. ONE CALL. (1-800-272-3020).
 2. NO TITLE RESEARCH OR UTILITY SERVITUDE RESEARCH WAS PERFORMED BY THE SURVEYOR.
 3. AS PER FLOOD INSURANCE RATE MAP, COMMUNITY-PANEL NUMBER 22071C0118F, EFFECTIVE DATE SEPTEMBER 30, 2016, THE SITE IS IN ZONE X (NO FLOOD ZONE).
 4. ELEVATIONS AND BEARINGS SHOWN ARE BASED ON GPS MEASUREMENTS, LSU C4GNET, VRS, NORTH AMERICAN DATUM (1983) LAMBERT CONFORMAL CONIC PROJECTION, LOUISIANA SOUTH ZONE, STATE PLANE COORDINATE SYSTEM, US SURVEY FEET, NAVD88.
 5. SOME FEATURES NOT DRAWN TO SCALE FOR CLARITY.
 6. SURVEY COMPLETE ON 09-03-2021.

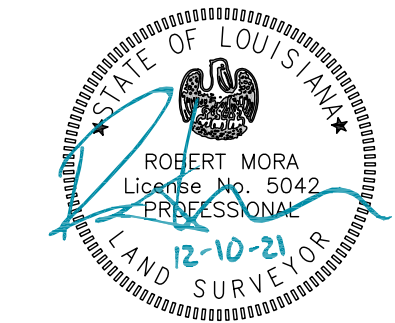
REFERENCE DRAWINGS:
1. UNO PHYSICAL PLANT SERVICES - EAST CAMPUS - SEWER, WATER & DRAINAGE MAPS, DATED 6-20-88
2. SEWER, WATER & DRAINAGE DRAWINGS BY EDWARD M. ALBA & ASSOCIATES, DATED 4-15-75.



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NO. DESCRIPTION DATE

PROJECT NO.	21048
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QUALITY CONTROL	RM

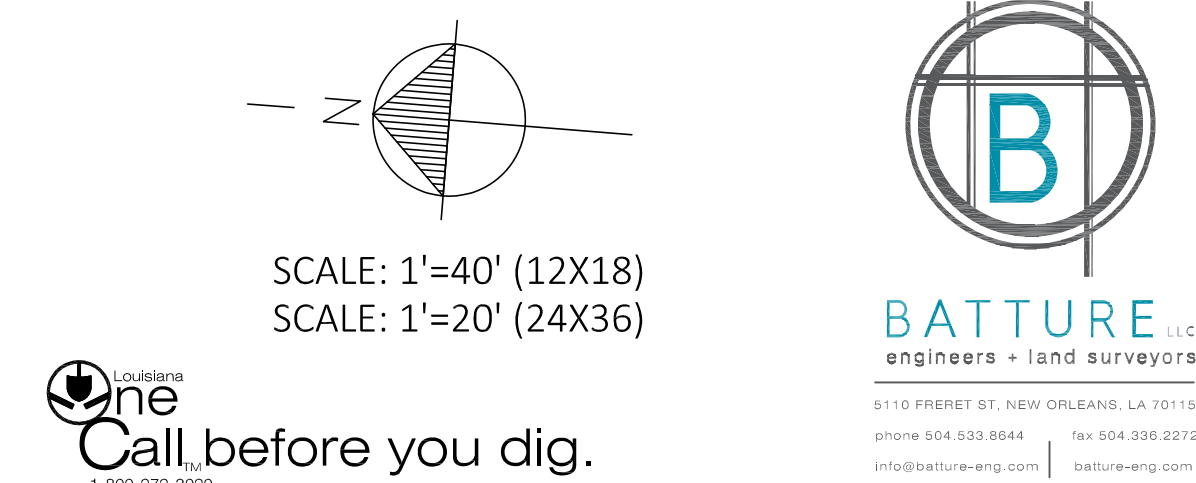
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EXISTING CONDITIONS

H/S



1. REMOVE ASPHALT & SUBBASE TO A DEPTH OF 24"
2. REMOVE CONCRETE
3. REMOVE WATER FOUNTAIN AND PLUG WATER LINE
4. CONTRACTOR TO PROTECT EXISTING DRAIN LINE DURING TREE REMOVAL

1. CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITY AGENCIES TO VERIFY THAT UTILITY SERVICES HAVE BEEN TERMINATED OR DISCONNECTED PRIOR TO REMOVAL OF STRUCTURES (BUILDINGS), WATER METERS, GAS METERS, ETC.
2. THE LOCATIONS OF UNDERGROUND AND OTHER NONVISIBLE UTILITIES SHOWN HEREON HAVE BEEN PLOTTED BASED UPON DATA EITHER FURNISHED BY THE AGENCIES CONTROLLING SUCH DATA AND/OR OBTAINED FROM RECORDS MADE AVAILABLE TO USE BY THE AGENCIES CONTROLLING SUCH RECORDS. WHERE FOUND, THE SURFACE FEATURES OF UTILITIES ARE SHOWN. THE ACTUAL NON-VISIBLE LOCATIONS MAY VARY FROM THOSE SHOWN HEREON. EACH AGENCY SHOULD BE CONTACTED RELATIVE TO THE PRECISE LOCATION OF ITS UNDERGROUND INSTALLATIONS PRIOR TO ANY RELIANCE UPON THE ACCURACY OF SUCH LOCATIONS SHOWN HEREON. PRIOR TO EXCAVATION AND DIGGING CALL LOUISIANA ONE CALL (#811).
3. CONTRACTOR SHALL FILL TRENCHES/VOIDS CREATED BY REMOVAL OF PIPES, DROP INLETS, TREES, STRUCTURES, ETC. WITH SELECT STRUCTURAL FILL. REMOVAL AND BACKFILLING OF THESE ITEMS SHALL CONFORM TO THE REQUIREMENTS OUTLINED IN SECTION 202 OF THE LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES (LSSRD), 2006 EDITION.
4. CLEARING AND STRIPPING - CONTRACTOR SHALL CLEAR THE EXISTING GROUND SURFACE OF PAVEMENT, VEGETATION, STUMPS, LOOSE TOPSOIL, DEBRIS, LOOSE FILL, ORGANIC MATTER, DEMOLITION DEBRIS, AND ANY OTHER DELETERIOUS MATERIALS. STRIPPING SHOULD BE TO A DEPTH NECESSARY TO REMOVE VEGETATION AND ROOTS AND REACH FIRM UNDISTURBED SOIL. CLEARING SHALL SHALL CONFORM TO THE REQUIREMENTS OUTLINED IN SECTION 201 OF THE LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES (LSSRD), 2006 EDITION. TOPSOIL, EXISTING ROOTS, ORGANIC MATERIAL, AND ANY FILL MATERIAL REMOVED FROM AREAS BELOW NEW RETAINING WALLS AND PAVEMENT CAN BE USED AS TOPSOIL IN LANDSCAPE AREAS
5. SUBGRADE PREPARATION - AFTER REACHING FIRM UNDISTURBED SOIL, EXPOSED GROUND SHALL BE PROOF ROLLED WITH A BULLDOZER, COMPACTOR OR TRACKED VEHICLE EXERTING A GROUND PRESSURE BETWEEN 10 AND 15 PSI. NO VIBRATORY SYSTEM (IF PRESENT) SHALL BE USED DURING PROOF ROLLING. PROOF ROLLING SHALL BE PERFORMED DURING PERIODS OF DRY WEATHER. THE GEO-TECHNICAL ENGINEER SHALL BE PRESENT DURING PROOF ROLLING.
6. CONTRACTOR SHALL PROVIDE DRAINAGE AWAY FROM PLANNED PAVING AREAS TO PREVENT WATER PONDING ON THE SITE DURING CONSTRUCTION.
7. STRUCTURAL FILL - SHALL BE DEFINED AS A SELECT GRANULAR MATERIAL (SUCH AS LOCALLY AVAILABLE RIVER SAND). SAND FILL (AASHTO A-3) SHOULD BE NON-PLASTIC AND FREE OF ROOTS, CLAY LUMPS, AND OTHER DELETERIOUS MATERIALS WITH NO MORE THAN 10% BY WEIGHT OF MATERIAL PASSING A U.S. STANDARD NO. 200 MESH SIEVE. THE MAXIMUM ORGANIC CONTENT SHOULD NOT EXCEED 5% BY WEIGHT. PRIOR TO TRANSPORTING STRUCTURAL FILL TO THE SITE, A SAMPLE SHOULD BE TESTED TO VERIFY ITS CONFORMANCE TO THESE RECOMMENDATIONS.
8. COMPACTION - STRUCTURAL FILL USED BENEATH GRADE SUPPORTED FOOTINGS AND PAVEMENTS SHOULD BE PLACED IN 6 TO 8-IN. LOOSE LIFTS AND COMPACTED TO AT LEAST 95% OF ITS MAXIMUM DRY DENSITY NEAR OPTIMUM MOISTURE IN ACCORDANCE WITH ASTM D 1557. STRUCTURAL FILL OR GENERAL FILL USED FOR NON-STRUCTURAL GRADING SHOULD BE SPREAD IN LOOSE LIFTS OF 10 TO 12 INCHES AND COMPACTED BY SEVERAL PASSES OF A BULLDOZER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING UTILITIES WHICH OCCUR DURING CONSTRUCTION AND SHALL IMMEDIATELY REPORT ANY DAMAGES TO THE UTILITY ENTITIES. ALL REPAIRS OF THE DAMAGED UTILITIES SHALL BE DONE BY THE RESPECTIVE UTILITY ENTITY. ALL REPAIRS SHALL BE DONE AT THE CONTRACTORS EXPENSE.

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C102

DEMOLITION PLAN

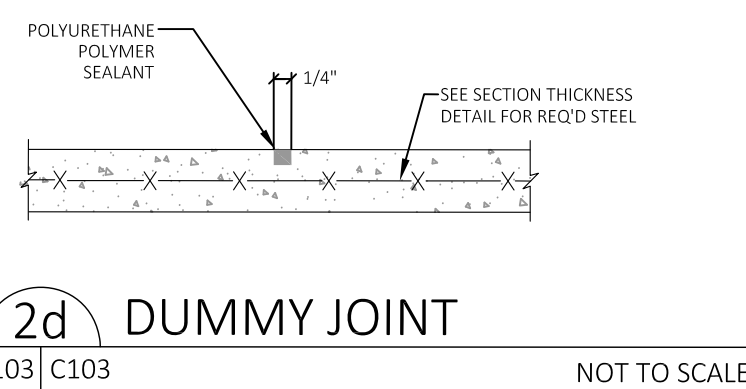
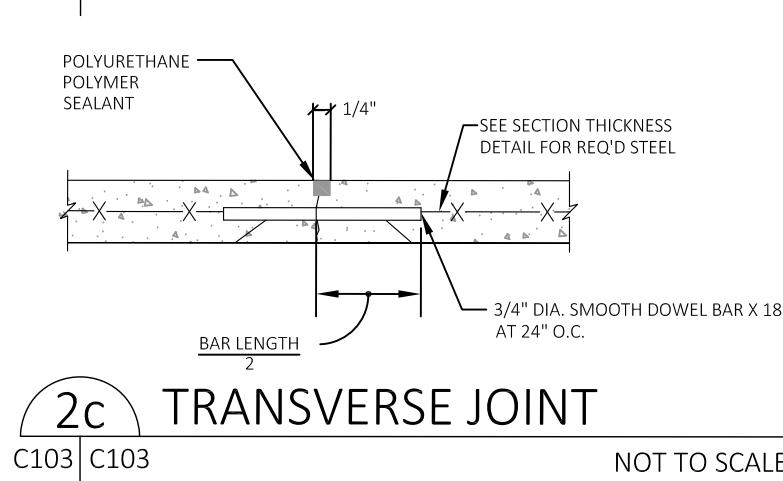
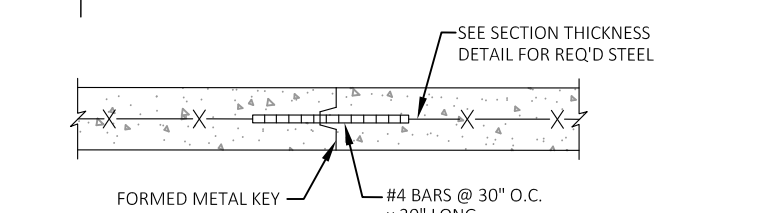
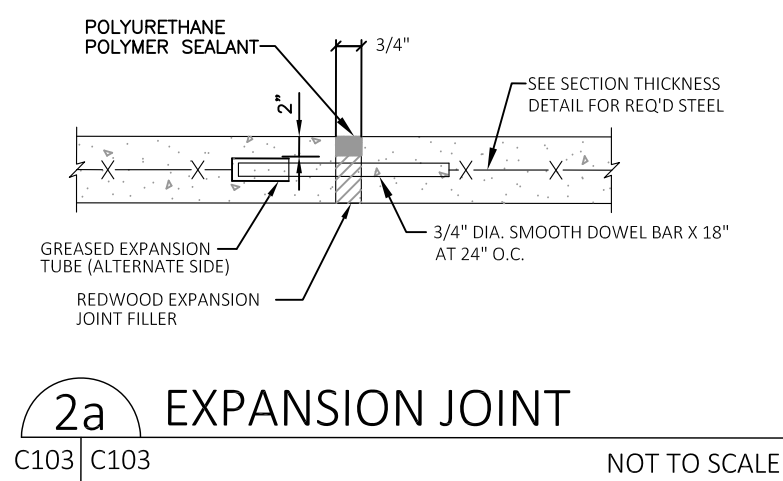
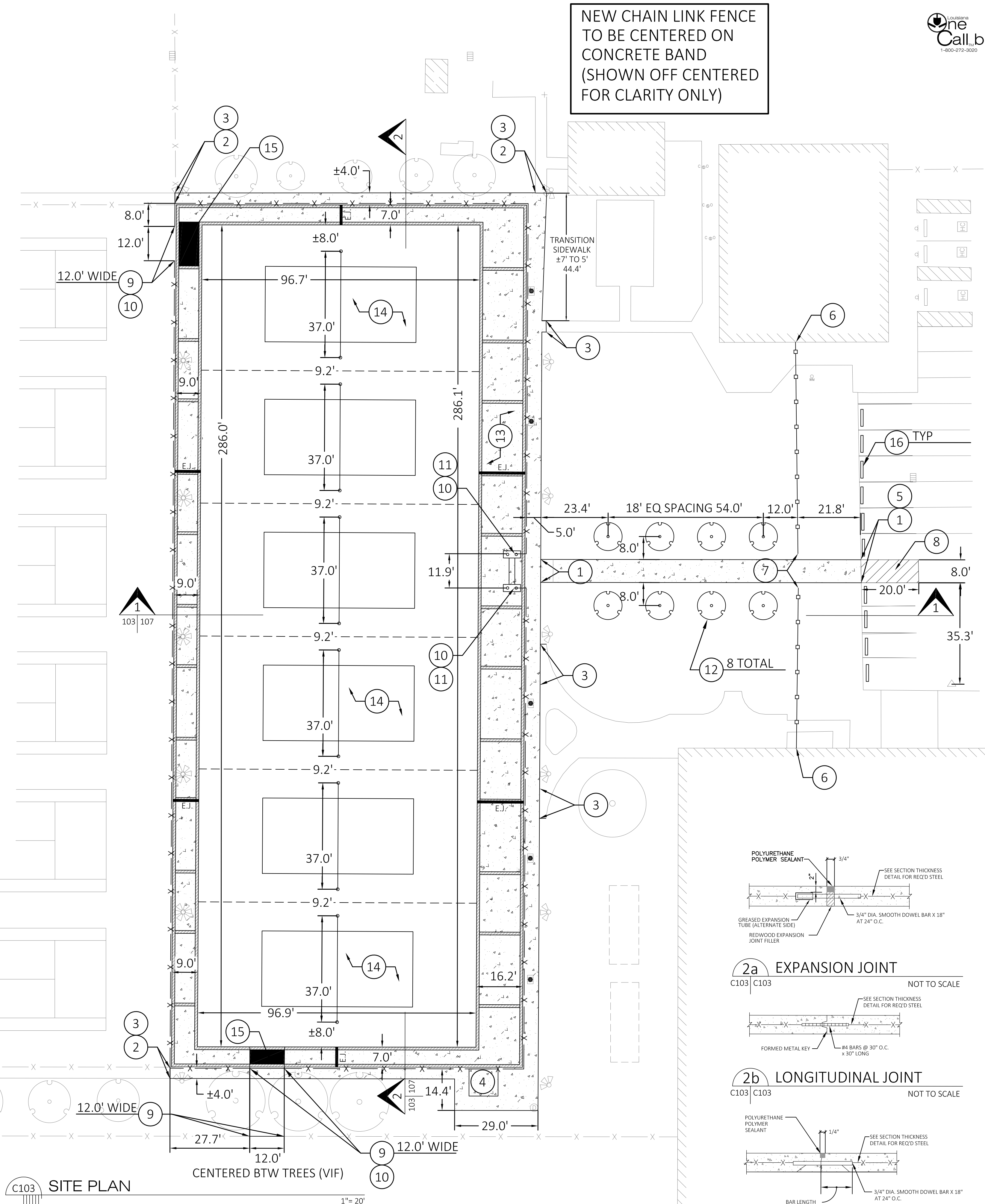
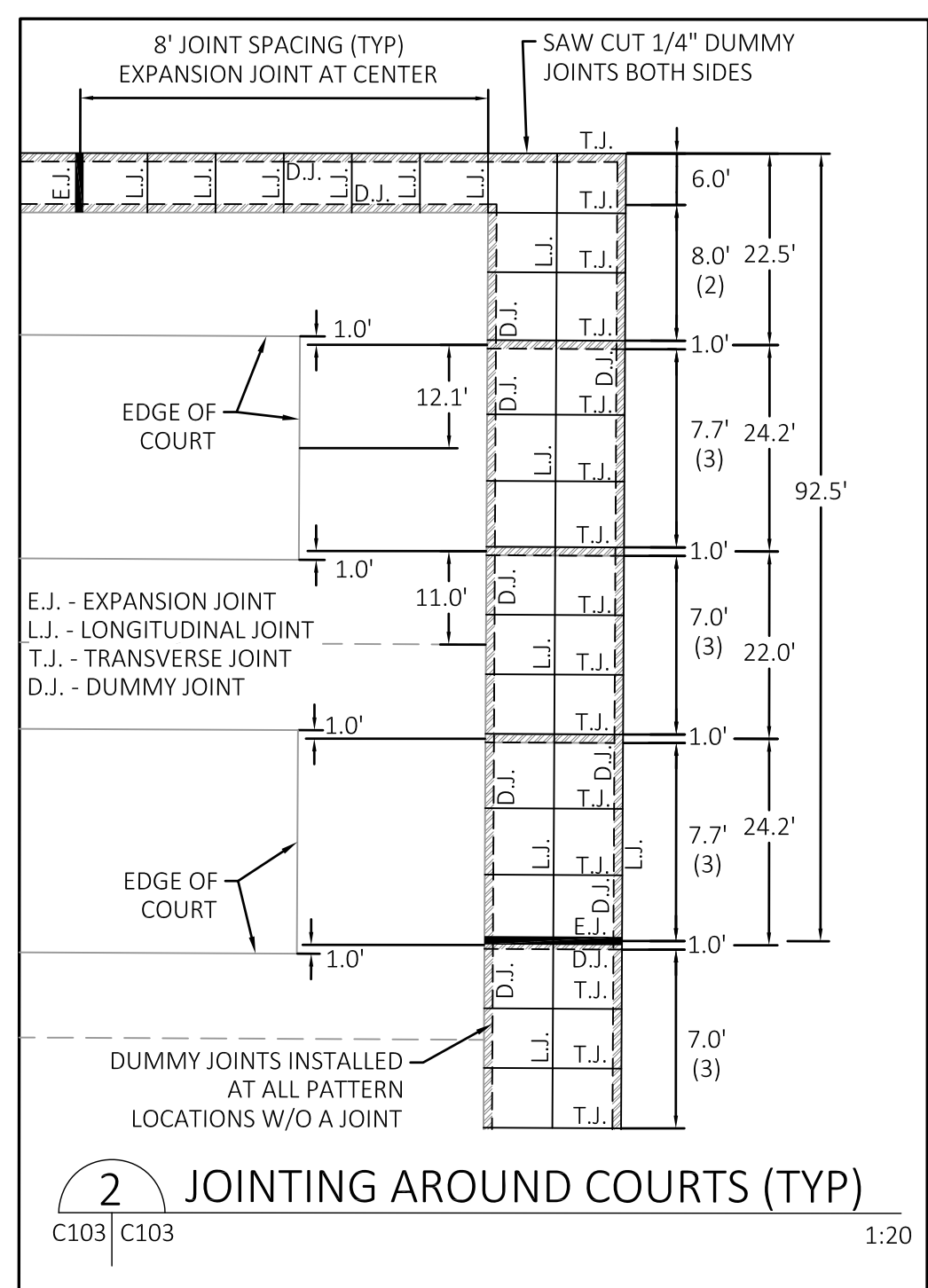
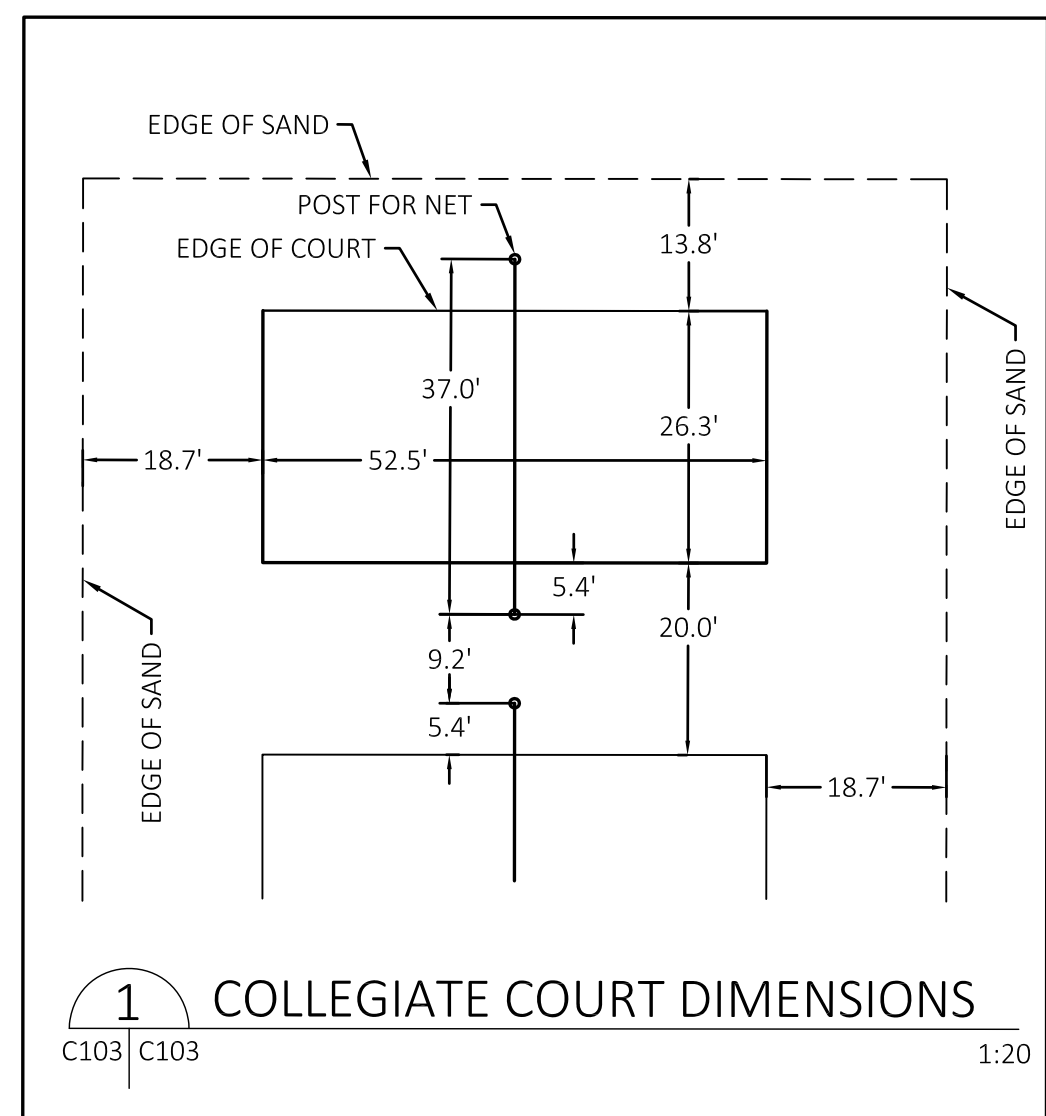
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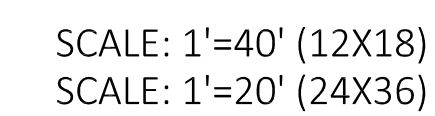
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C103

SITE PLAN

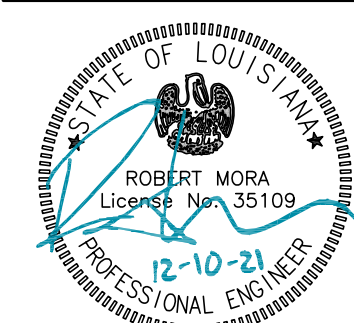




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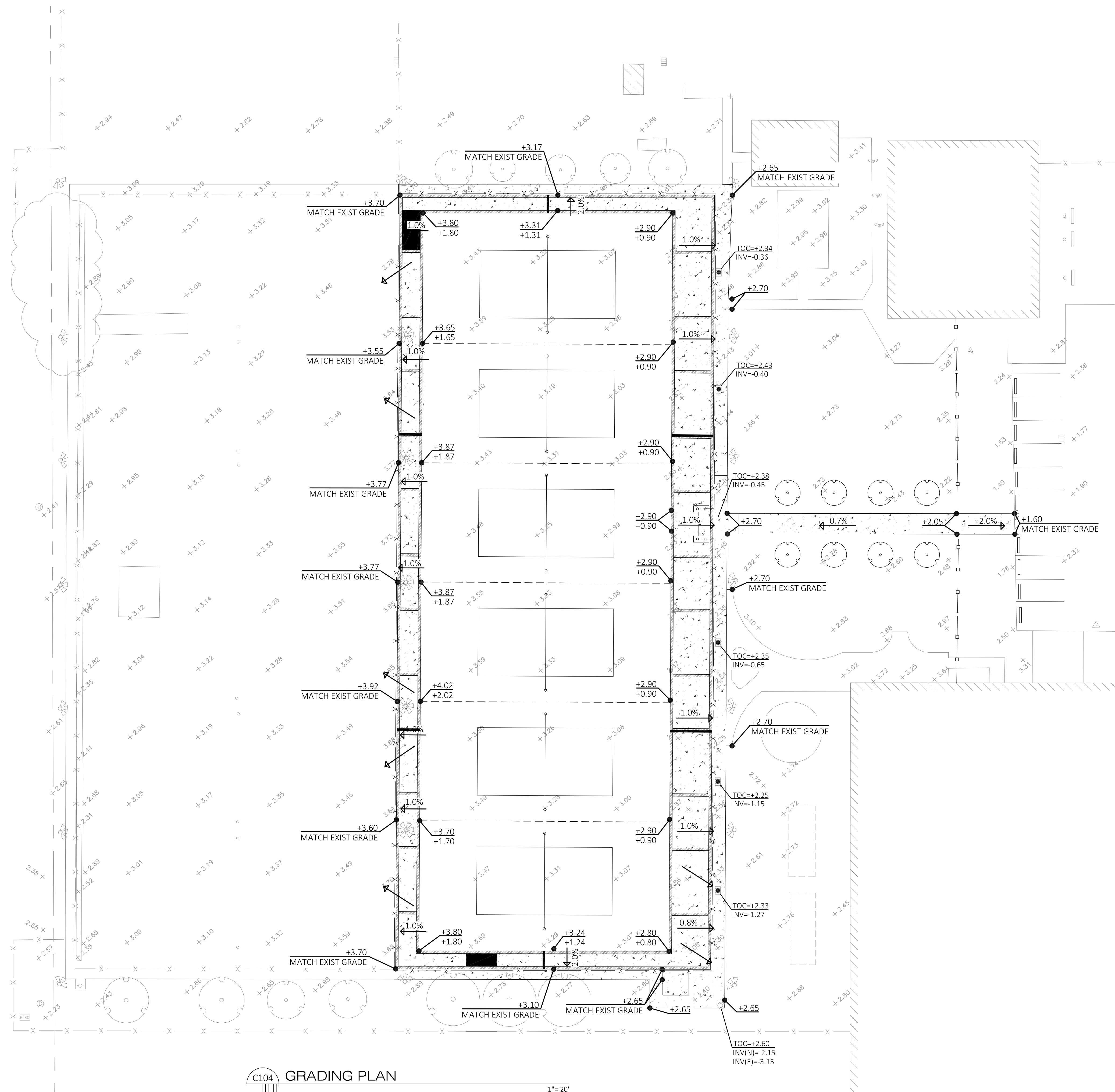
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C104

GRADING PLAN

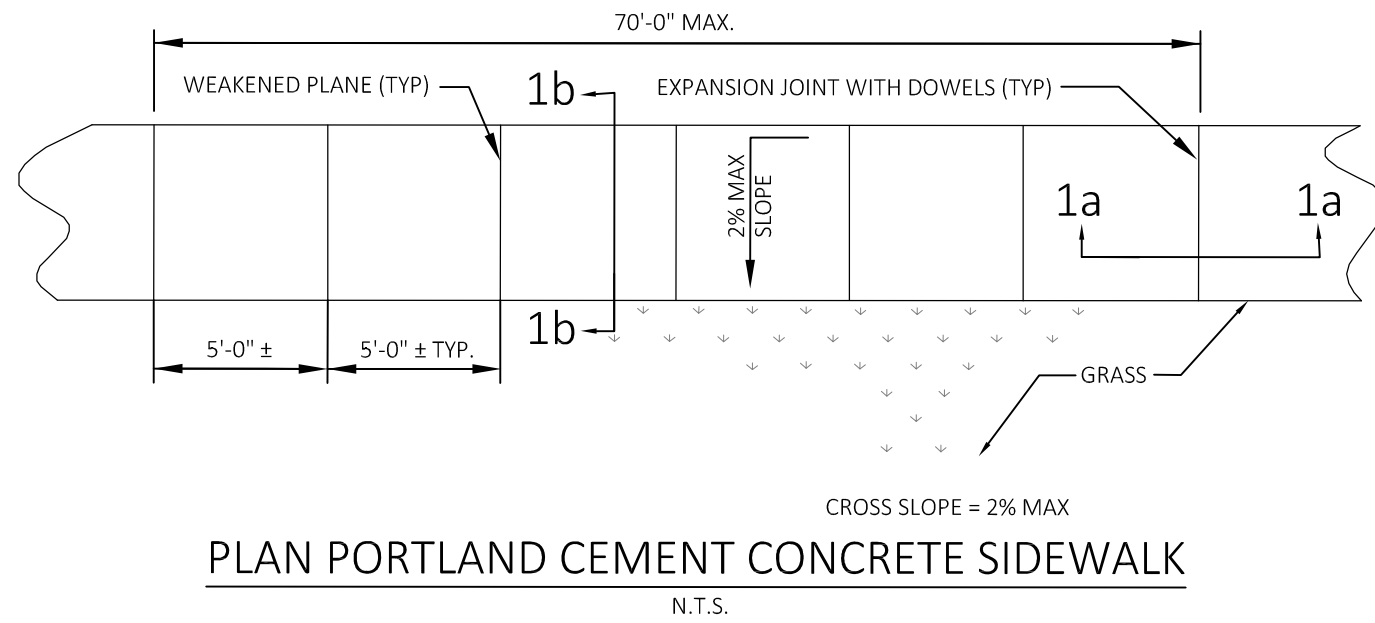


C104 GRADING PLAN

1"= 20

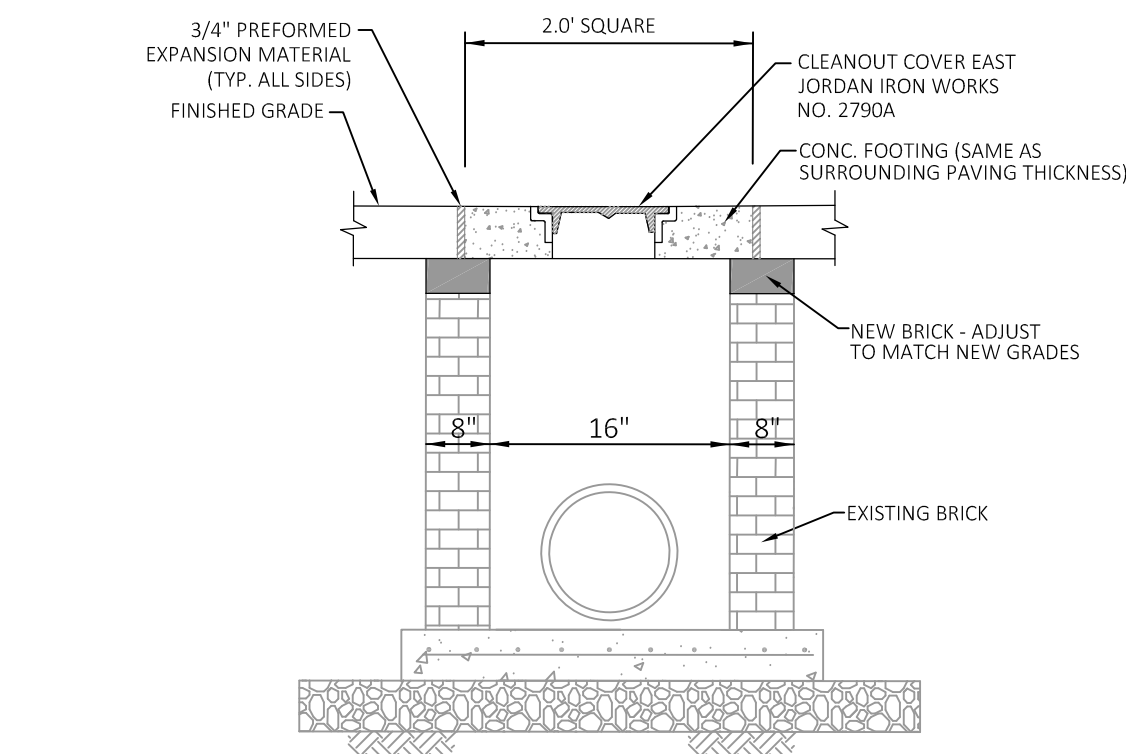


CallTM before you dig.

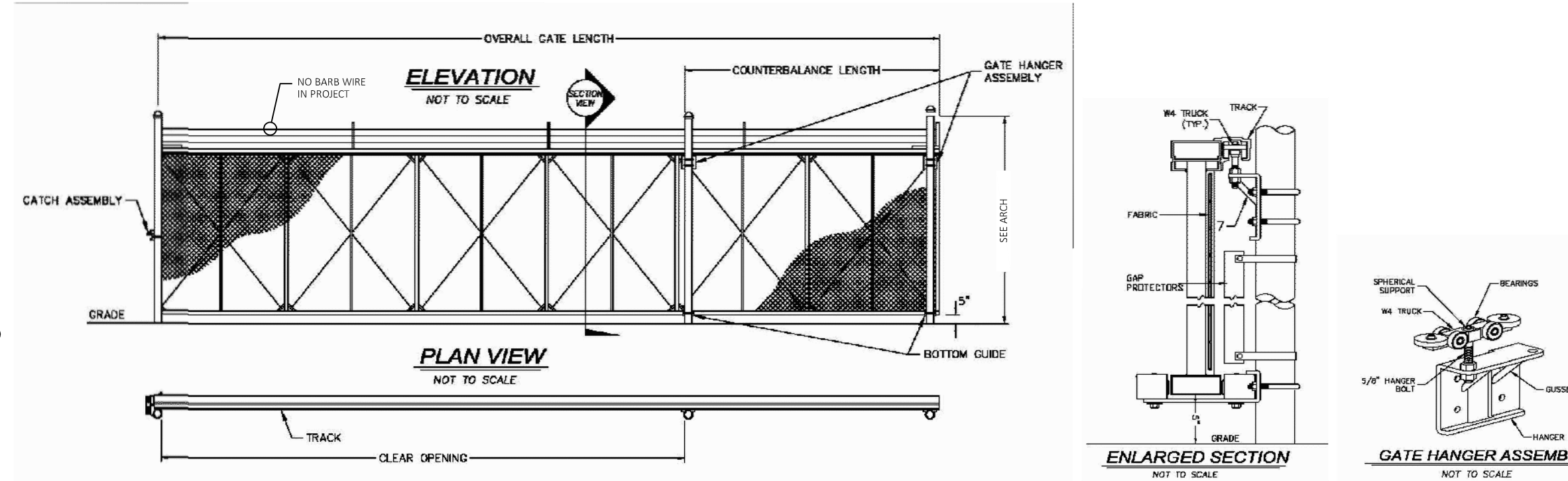
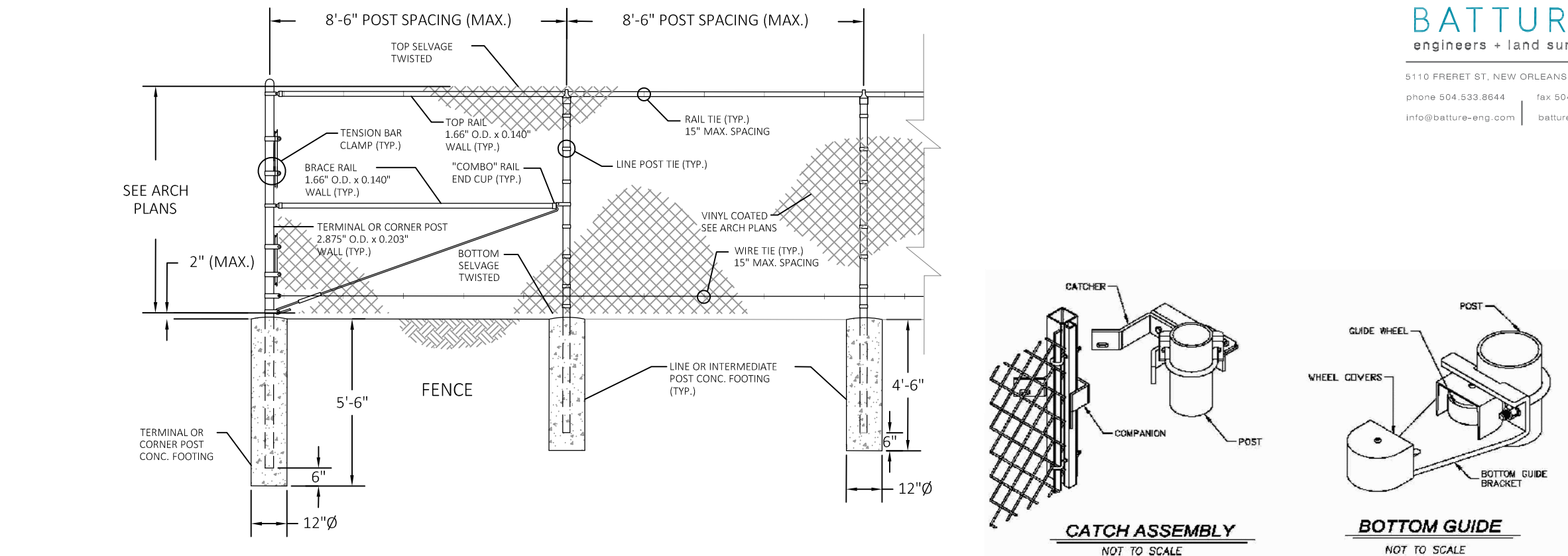


PLAN PORTLAND CEMENT CONCRETE SIDEWALK
N.T.S.

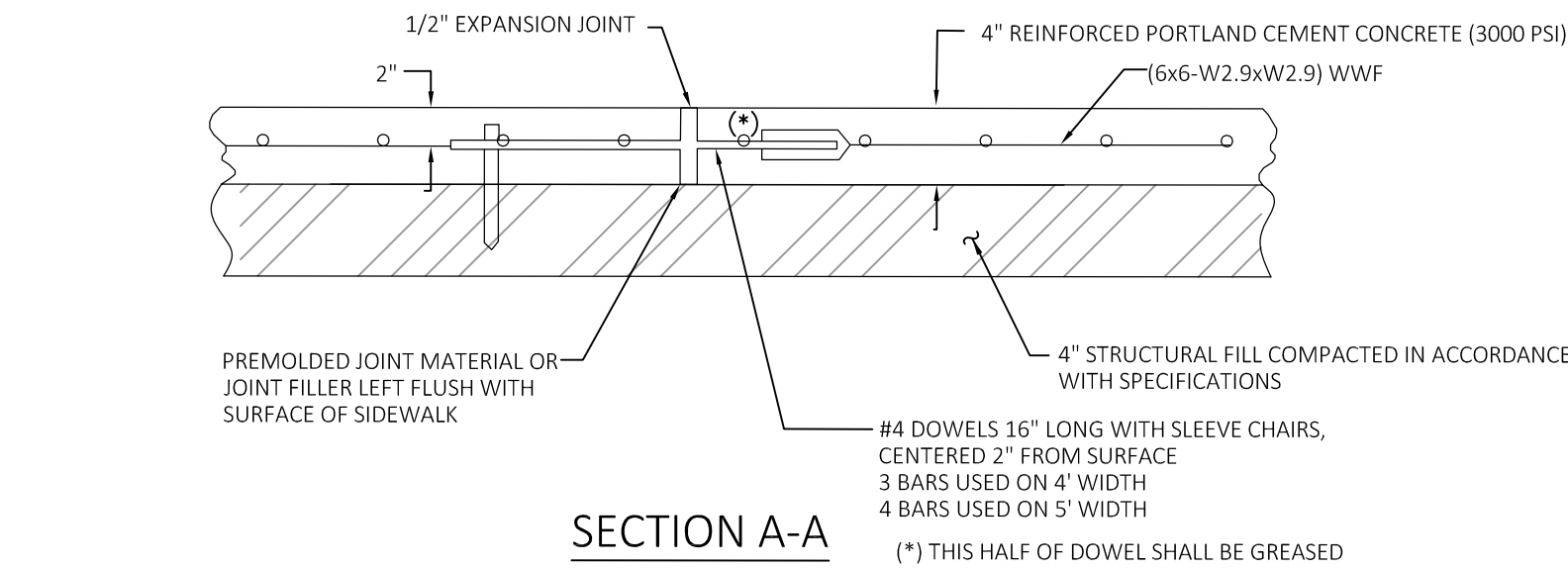
1 CONCRETE SIDEWALK
C103 C106 NOT TO SCALE



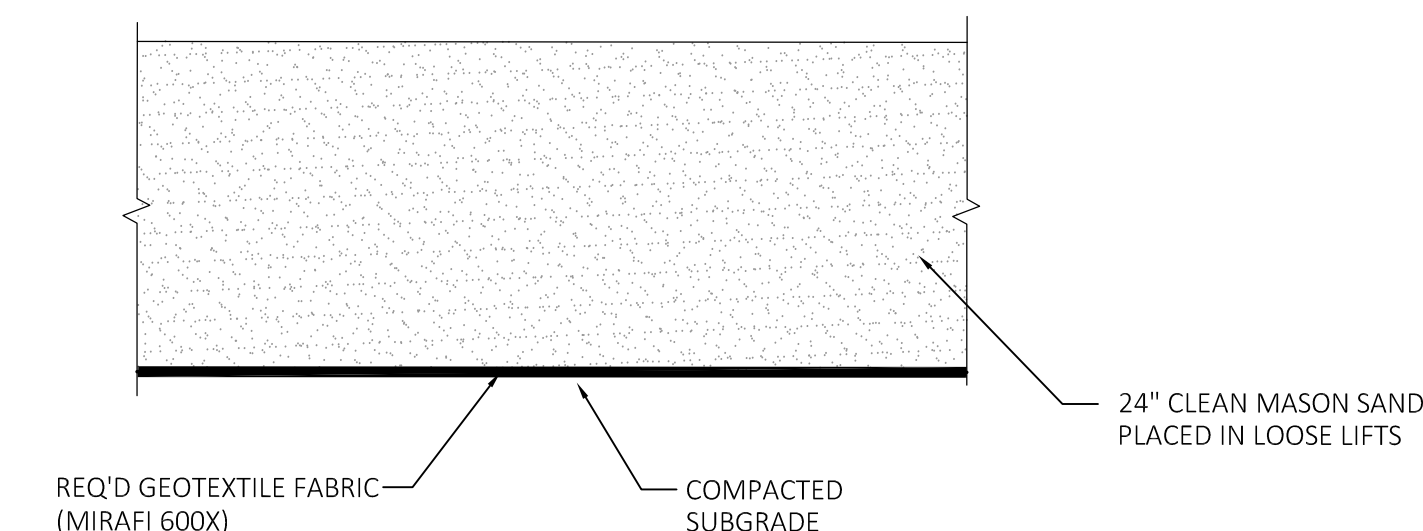
3 DROP INLET W/ CLEANOUT COVER
C104 C106 NOT TO SCALE



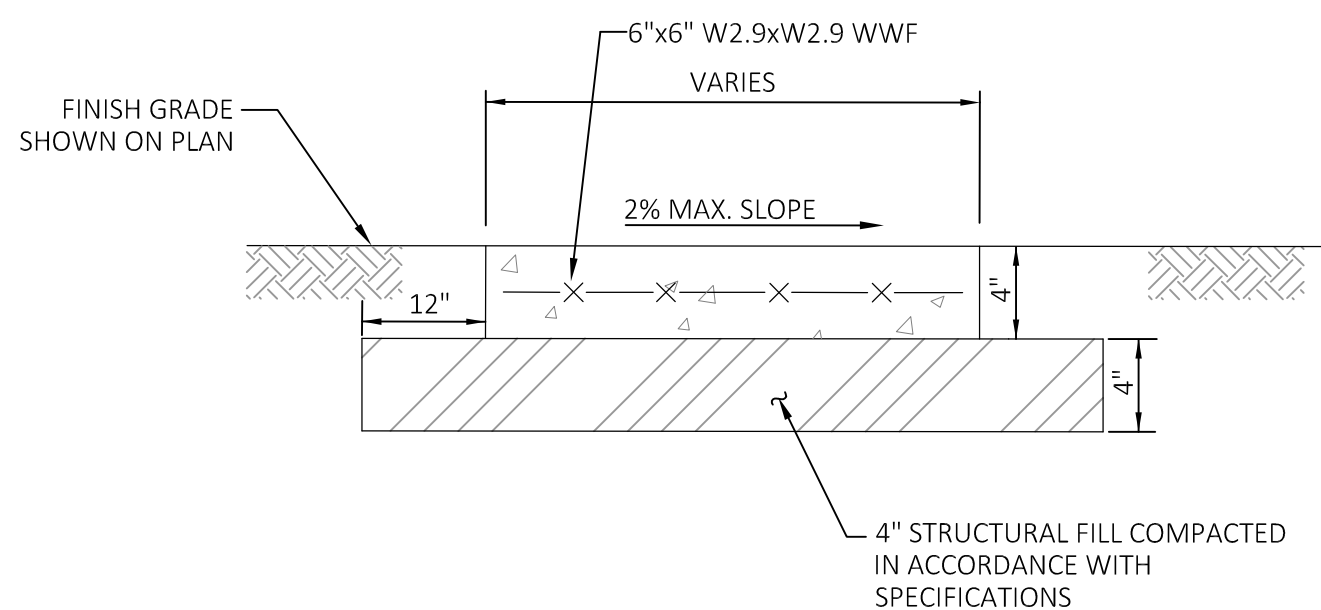
6 CHAIN LINK FENCE & ROLLER GATE
C103 C106 NOT TO SCALE



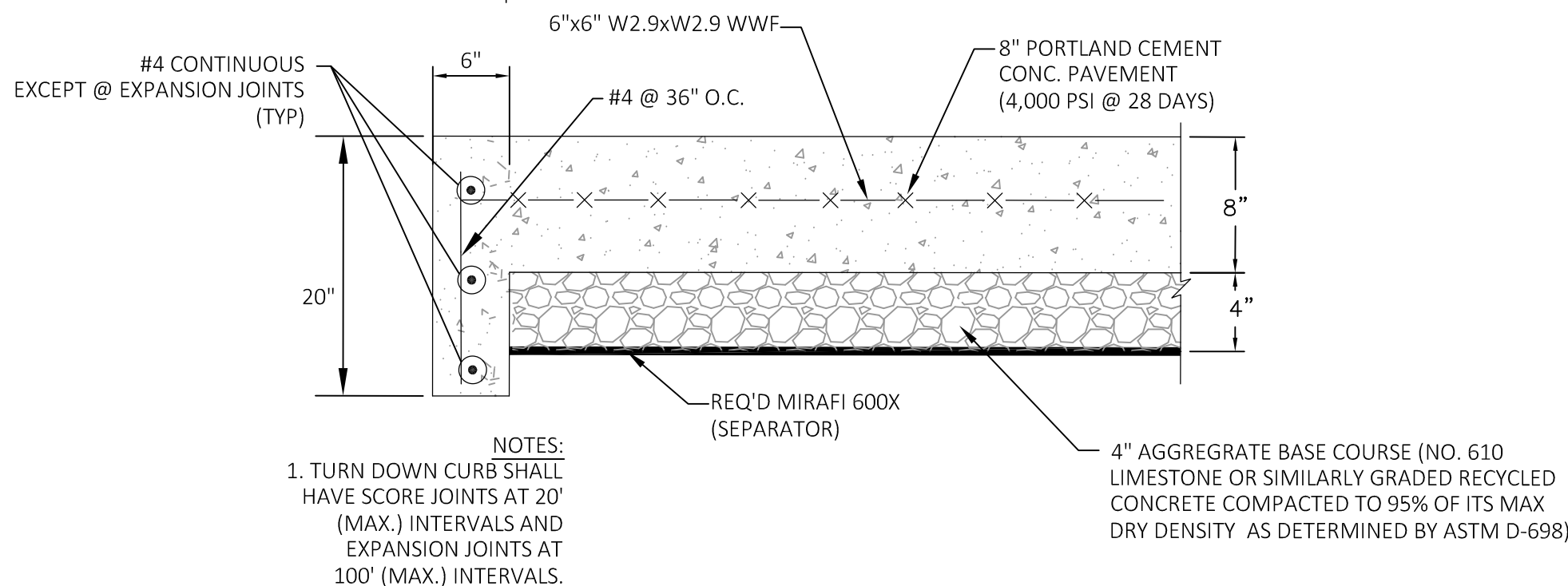
1a CONCRETE SIDEWALK SECTION
C103 C106 NOT TO SCALE



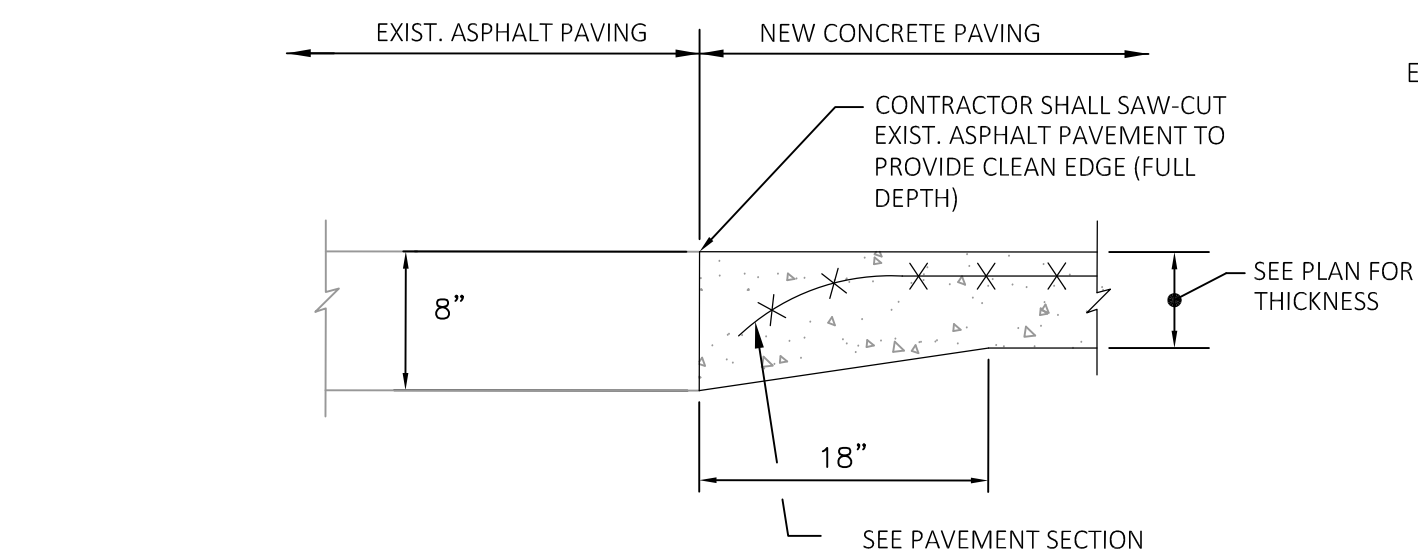
4 CLEAN MASON SAND CROSS SECTION
C103 C106 NOT TO SCALE



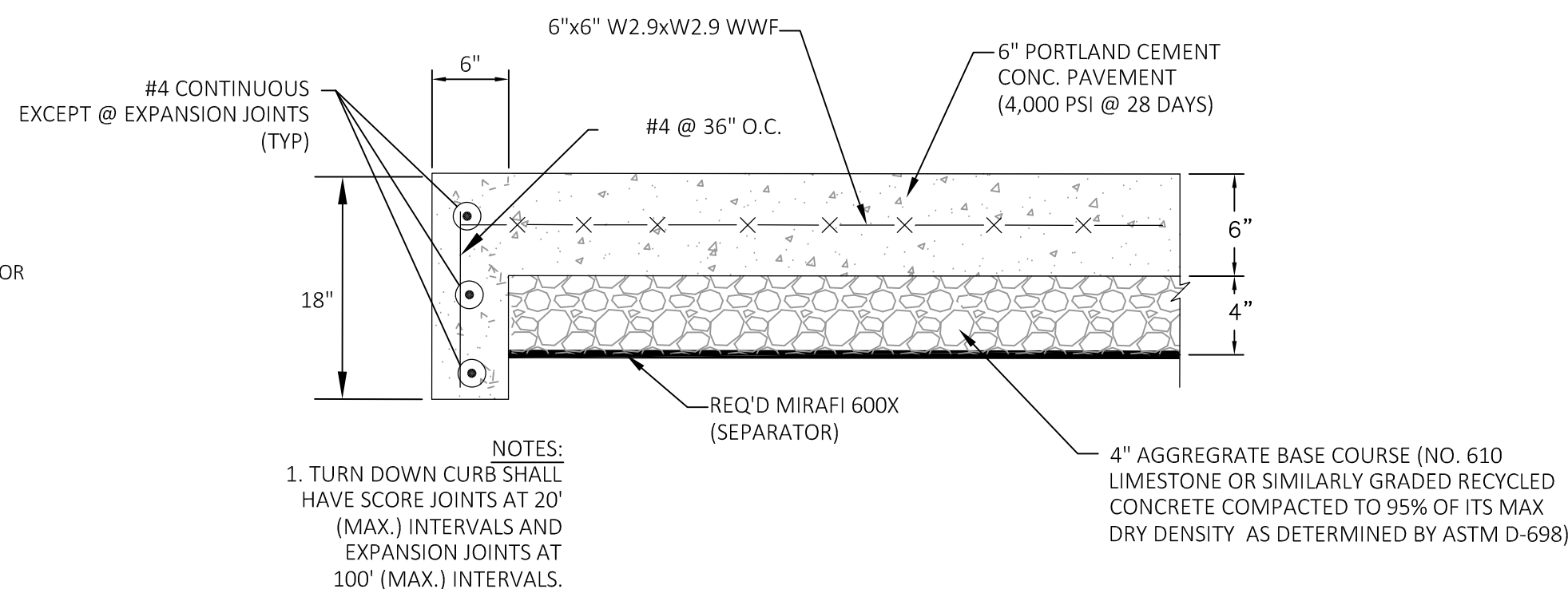
1b CONCRETE SIDEWALK SECTION
C103 C106 NOT TO SCALE



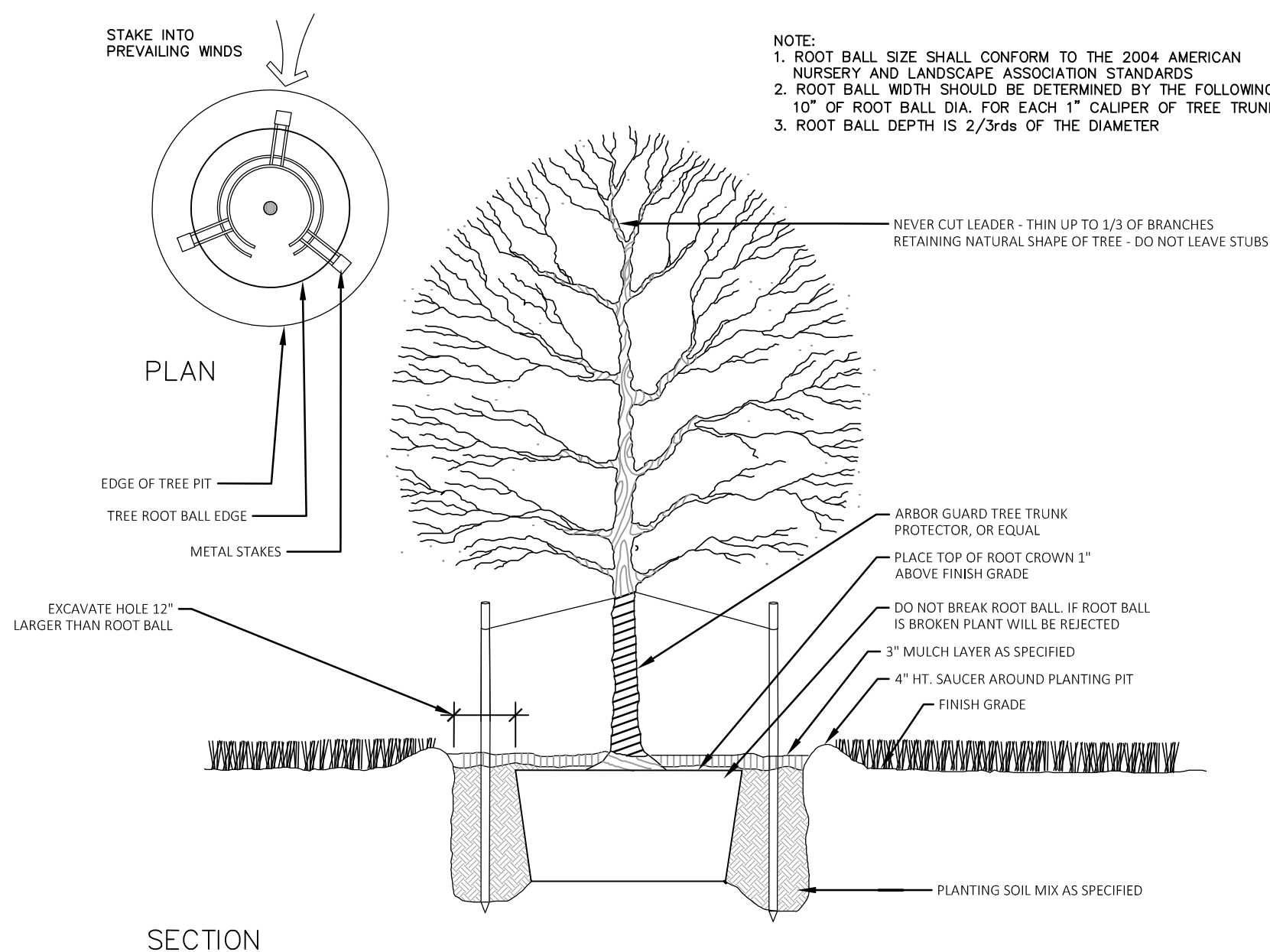
5 8" P.C.C.P. SECTION W/ TURN DOWN CURB
C103 C106 NOT TO SCALE



2 BUTT JOINT
C103 C106 NOT TO SCALE



6 6" P.C.C.P. SECTION W/ TURN DOWN CURB
C103 C106 NOT TO SCALE



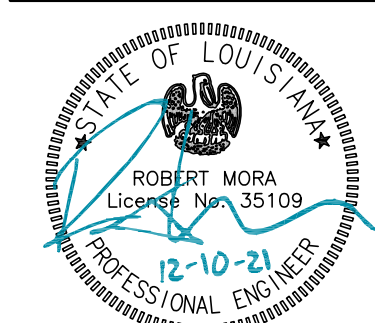
7 3" CALIPER LACEBARK ELM (ULMUS PARVIFOLIA)
C103 C106 NOT TO SCALE



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PHASE CD
DATE 12.10.21
PROJECT MANAGER BJ
QUALITY CONTROL RM

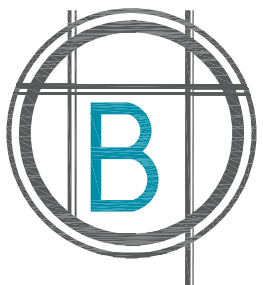
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DETAILS

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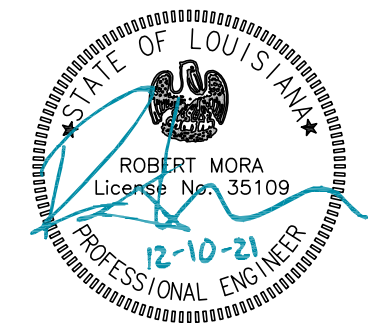


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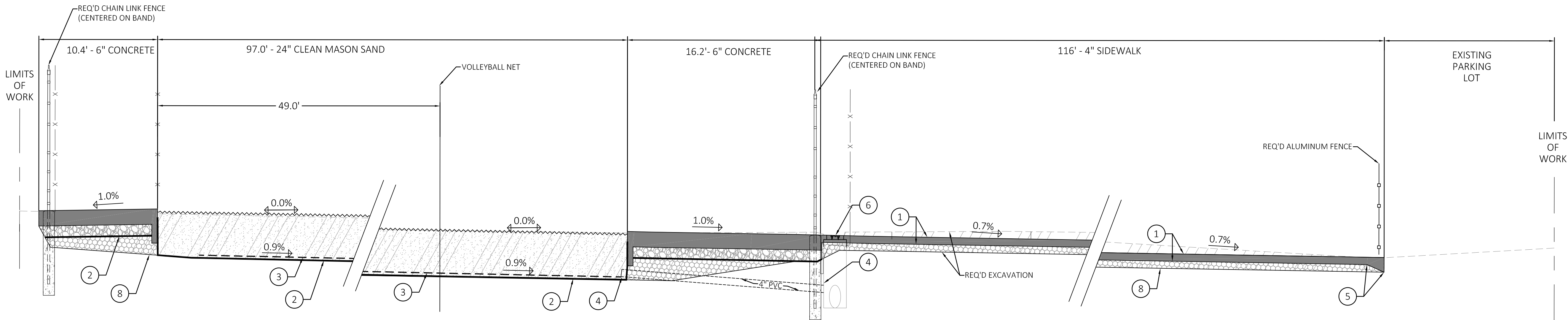
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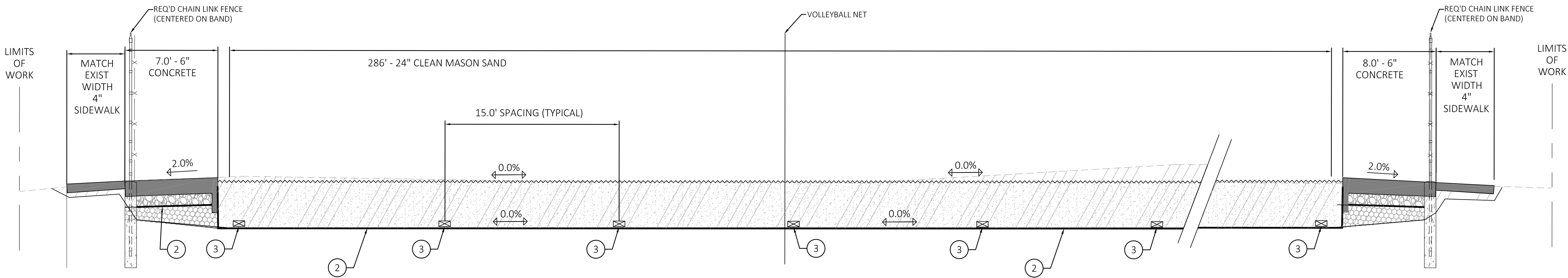
C107

TYPICAL SECTIONS

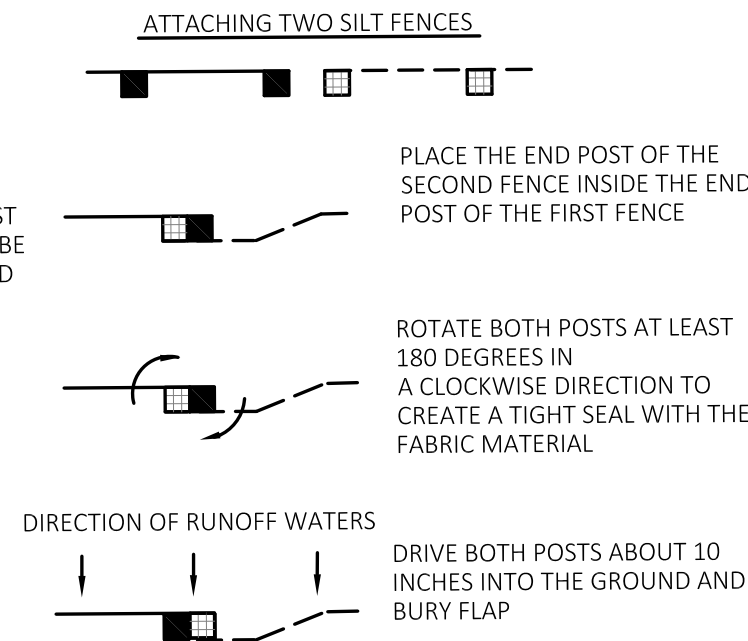
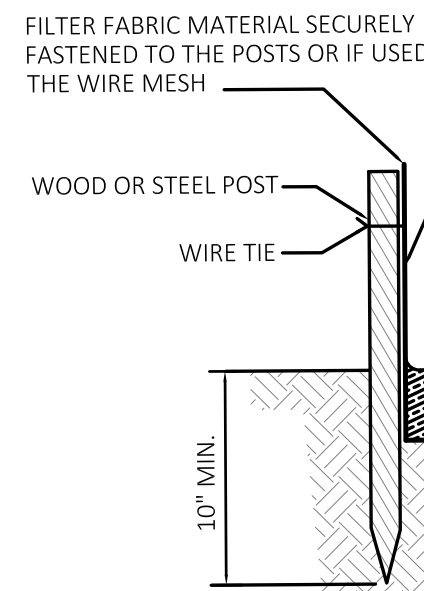
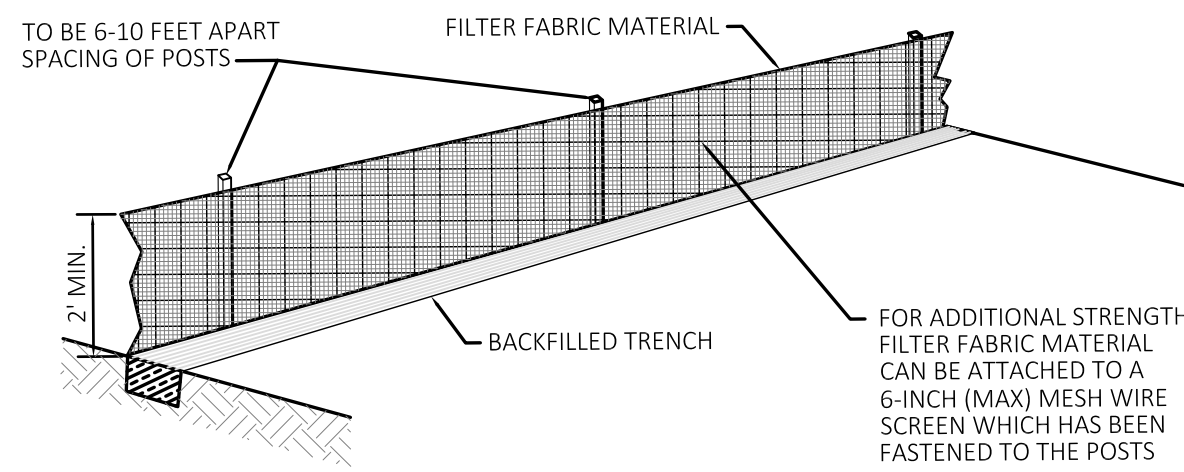


1 TYPICAL SECTION 1
C103 C107 1:5 horizontal 1:10 vertical

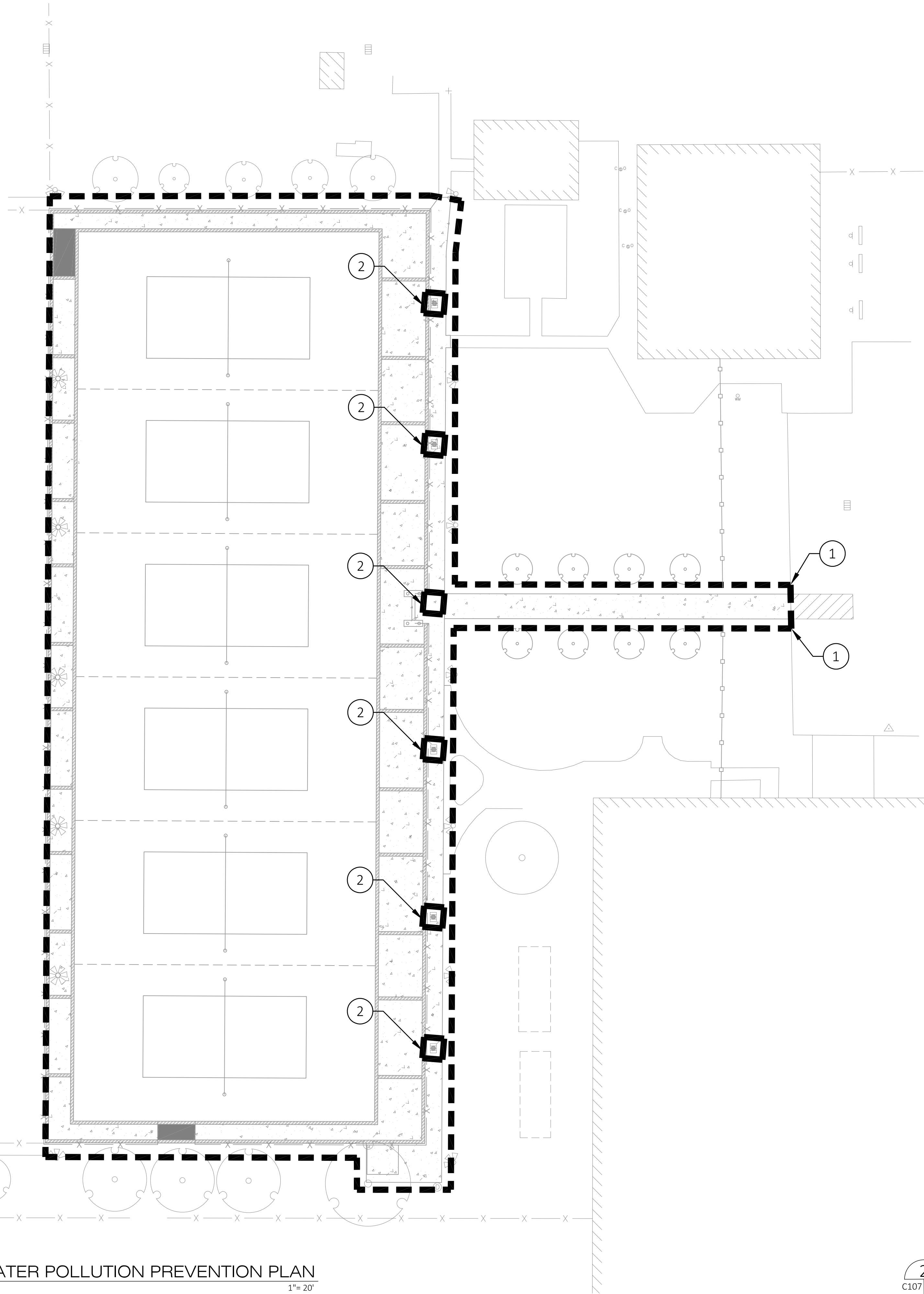
SECTION LEGEND	
1 BEGIN / END 8.0' SIDEWALK (SEE DETAIL 1, SHT C107)	EXCAVATION
2 REQ'D GEOTEXTILE FABRIC	CLEAN MASON SAND
3 REQ'D 12" WIDE HYDRAWAY	CONCRETE
4 REQ'D 12" HYDRAWAY END OUT CONNECTOR TO 4" CORRUGATED PVC	610 LIMESTONE
5 REQ'D BUTT JOINT (SEE DETAIL 2, SHT C107)	RIVER SAND
6 REQ'D MODIFICATION OF DROP INLET TO CLEANOUT (SEE DETAIL 3, SHT C107)	
7 CONNECT 4" PVC TO EXIST DROP INLET	
8 COMPACTED SUB-GRADE	



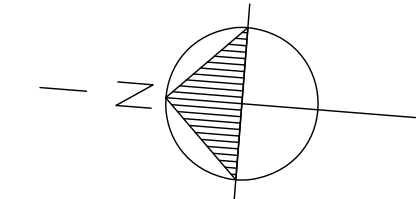
2 TYPICAL SECTION 2
C103 C107 1:5 horizontal 1:10 vertical



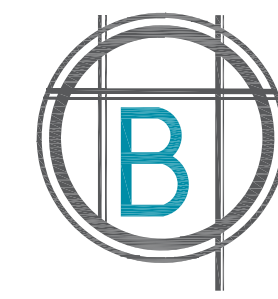
1 REINFORCED FILTER FABRIC FENCE
C107 C108 NOT TO SCALE



C108 STORMWATER POLLUTION PREVENTION PLAN
1"= 20'



SCALE: 1"=40' (12X18)
SCALE: 1"=20' (24X36)



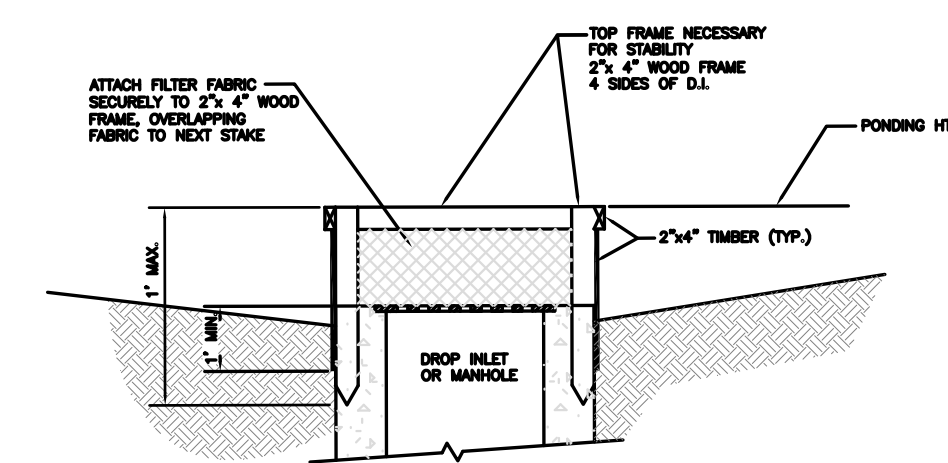
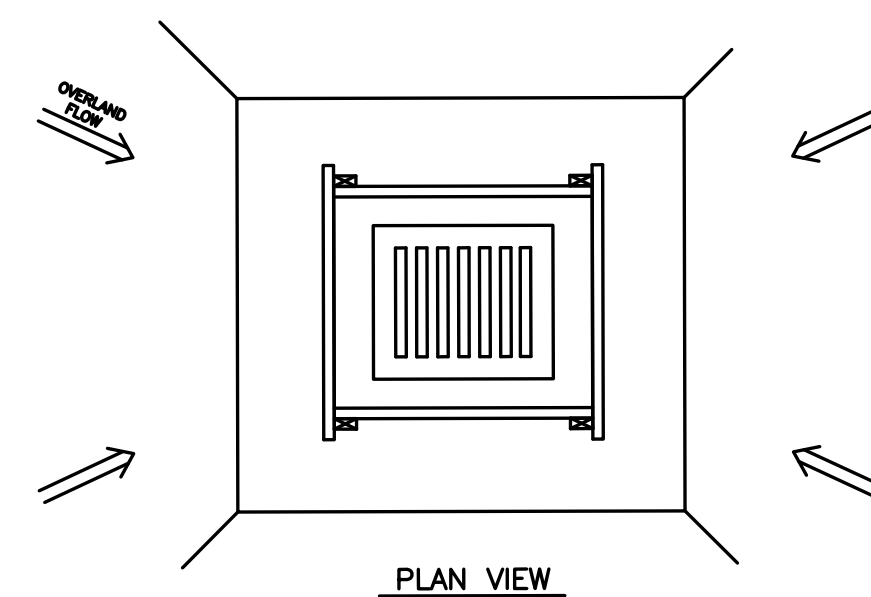
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SWPPP LEGEND

- 1 INSTALL REINFORCED FILTER FABRIC FENCE, SEE SWPPP DETAIL 1
- 2 INSTALL REINFORCED FILTER FABRIC FENCE AT DROP INLETS, SEE SWPPP DETAIL 2



NOTES:
1. SEE SHEET C108 FOR NOTES AND REQUIREMENTS PERTAINING TO STORMWATER POLLUTION PREVENTION AND EROSION CONTROL

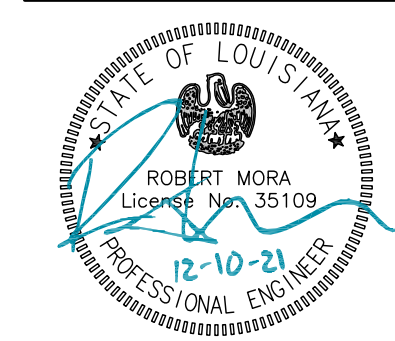


2 FILTER FABRIC DROP INLET
C107 C108 NOT TO SCALE

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C108

STORMWATER POLLUTION PREVENTION PLAN

H/S

wood or steel installed a minimum 2' above (0.6 m) in the ground. Filter material shall be burlap weighing approximately 7 1/2 ounces per square yard (0.25 kg per sq. m), approved tupe fabric or approved geotextile fabric. Geotextile fabric shall comply with Section 1019, Class F.

ii) Self-Supported: Self-supported silt fencing shall consist of an approved geotextile fabric suitably attached to posts of either wood or steel installed in accordance with plan details. Geotextile fabric shall comply with LaDOTD Section 1019, Class G.

iii) Temporary Construction Entrance: Temporary construction entrances shall consist of stone or recycled Portland cement concrete complying with LaDOTD Subsection 711.02, 21b (1 kg) class placed on geotextile fabric complying with Section 1019, Class D. The geotextile fabric underliner shall be placed at the locations designated for temporary construction entrances before stone or recycled Portland cement concrete is placed. The stone or recycled Portland cement concrete shall be placed and compacted to the required thickness as directed. This work also includes additional measures required to remove mud from truck tires, such as wash racks, etc.

iv) Hay Bales: Hay or straw bales shall be rectangular bales, acceptable to the Director. The average length of bales shall be 34 inches (863 mm) minimum.

4. Exposure of Erodeable Earth: The Director may direct the Contractor to provide immediate permanent or temporary erosion or pollution control measures to prevent contamination of streams, lakes, tidal waters, reservoirs, canals or other impoundments or prevent detrimental effects on property outside the right-of-way and damage to the project. Limitations of areas in which excavation and embankment operations are underway shall be commensurate with the Contractor's capability and progress in keeping finish grading, temporary erosion control, and permanent erosion control measures in accordance with the accepted schedule.

5. Incorporation of Erosion Control Features: Use of temporary erosion control features will be authorized to correct unforeseen conditions during construction. Erosion control features shall be installed prior to the time when the permanent erosion control features, or to provide immediate temporary control of erosion that develops during normal construction operations but is not associated with permanent erosion control features. Permanent erosion control features shall be incorporated into the project at the earliest practical time. Temporary erosion control features will be used as directed in areas where stage construction or other conditions not under control of the Contractor preclude completion of a section of roadway in a continuous manner, or where subsequent construction operations will cause damage to permanent erosion control features.

6. Construction Requirements: Temporary erosion control features shall consist of, but not be limited to, the following:

a) Sandbagging: Sandbags shall be placed as directed.

b) Baled Straw or Hay: Baled straw or hay shall be placed as directed to form checks or dams to control erosion and siltation. Bales shall be properly stacked or otherwise secured as directed, as shown on the plans. The bales shall be buried as necessary to prevent scour around the bales. A minimum of 2 stakes shall be driven through each bale.

c) Filter Socks: Filter socks may be used in lieu of baled straw or hay in front of catch basins.

d) Geotextile Filters: Use geotextile filters in combination with filter socks at catch basins in lieu of baled straw or hay.

e) Slope Drains: Slope drains shall be constructed with acceptable materials in accordance with plan details or as directed, if necessary to prevent scour. The discharge area shall be stabilized or protected by temporary riprap as directed. Cost of discharge area protection will be included under the slope drain item.

f) Sediment Basins: Sediment basins shall be constructed in accordance with plan details or as directed.

g) Check Dams: Check dams shall be constructed in accordance with plan details, as directed. Check dams shall be constructed before clearing and grubbing or grading in the area is begun unless otherwise directed.

h) Silt Fencing: Silt fencing shall be furnished and constructed at designated locations or other locations, as directed by the Director.

i) Berms: Earth berms shall be constructed as directed to direct the flow of water from erodible surfaces.

ii) Unforeseen Conditions: When unforeseen conditions are encountered, the Director may direct the Contractor to construct such temporary devices as required to control erosion during construction. Details may be developed jointly by the Director and the Contractor.

k) Maintenance of Erosion Control Features: The Contractor shall install, construct, repair, and maintain temporary erosion control features within 7 calendar days of being instructed to do so by the Director. Temporary erosion control features shall be inspected at least once every 14 calendar days and within 24 hours after a rainfall event of 0.5 inches or greater. The features are to be maintained as described below and, if required, replaced as directed at no direct pay.

i) Straw or Hay Bale Barriers: The bale barriers shall be inspected after each rainfall and time frame as defined above and at least daily during prolonged rainfall. Close attention shall be paid to the repair of damaged bales, "end runs" and undercutting beneath bales.

ii) Filter Socks and Geotextile Fabric: Ensure that filter socks remain in place and that geotextile filters do not allow runoff to enter the catch basin around the edges.

iii) Slope Drains: Slope drains shall be inspected weekly and after each rainfall as defined above, and repairs made if necessary. The Contractor shall avoid the placement of any material on and prevent construction traffic across the slope drain.

iv) Sediment Check Dams: Sediment deposits shall be removed when the deposits reach one-half the height of the check dam. Inspections shall be made to insure that the center of the dam is lower than the edges. Erosion around the edges shall be corrected by sediment removal.

v) Silt Fencing: Sediment deposits shall be removed when the deposits reach one-half the height of the fence. If the fabric on the silt fence decomposes or becomes ineffective, the fabric shall be replaced promptly.

vi) Temporary Stone Construction Entrance and/or Wash Racks: The construction entrance shall be maintained to allow for removal of mud from the tires. The sediment from the wash rack runoff shall be removed once the wash rack is no longer performing as intended.

vii) Removal of Temporary Erosion Control Features: Temporary erosion control feature existing at the time of construction of permanent erosion control features shall be removed or incorporated into the soil in such manner that no detrimental effect will occur to the project. The Director may direct the Contractor to remove the temporary erosion control features, silt fences, check dams, and other catchment areas shall be removed, replaced with acceptable soils in accordance with LaDOTD Subsection 203.06.

SWPPP REQUIREMENTS

a. Contractor shall meet the following elements below as applicable to the project, even if elements are not depicted on plan.

b. Mask Clearing Limits and Environmentally Critical Areas: Within the boundaries of the project site and prior to beginning land disturbing activities including clearing and grading, clearly mark all clearing limits, easements, setbacks, adjacent environmentally critical areas, and buffer areas. Treat these areas as if they were to be considered as wetlands within the construction area.

c. Retain Top Layer: Within the boundaries of the project site, the duff layer, topsoil, and native vegetation, if any, shall be retained in an undisturbed state to the maximum extent feasible. If it is not feasible to retain the top layer in place, it should be stockpiled on-site, covered to prevent erosion, and replaced immediately upon completion of the land disturbing activities to the maximum extent feasible.

d. Establish Construction Access: Limit construction vehicle access, whenever possible, to one route. Stabilize access points and minimize tracking sediment onto public roads. Promptly remove any sediment tracked off site.

e. Downstream Protection: Downstream of the project site, protect properties and receiving waters downstream from the development sites from erosion due to increases in the volume, velocity, and peak flow rate of drainage water from the project site. If it is necessary to construct flow control facilities to meet this requirement, these facilities shall be functioning prior to implementation of other land disturbing activity, including but not limited to the use of silt fencing along all site boundaries. If permanent infiltration facilities are used to control flows during construction, these facilities shall be protected from siltation during the construction phase of the project.

f. Prevent Erosion and Sediment Transport from the Site by Vehicles: Whenever construction vehicle access routes intersect or cross over the site, the transport of sediment onto the paved road shall be minimized. If sediment is transported onto a paved road surface, the roads shall be cleaned thoroughly at the end of each day. Sediment shall be removed from paved roads by shoveling or sweeping and shall be transported to a controlled sediment disposal area. If sediment is tracked off site, roads shall be cleaned thoroughly at the end of each day, or at least twice daily during wet weather. Street washing is allowed only after sediment is removed, and street washwater shall be prevented from entering the drainage system and receiving waters.

g. Stabilize Soils: Prevent on-site erosion by stabilizing all exposed and unworked soils, including stock piles and earthen structures such as dikes, dikes, and diversions. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed.

h. Downstream Protection: Downstream of the project site, protect properties and receiving waters downstream from the development sites from erosion due to increases in the volume, velocity, and peak flow rate of drainage water from the project site. If it is necessary to construct flow control facilities to meet this requirement, these facilities shall be functioning prior to implementation of other land disturbing activity, including but not limited to the use of silt fencing along all site boundaries. If permanent infiltration facilities are used to control flows during construction, these facilities shall be protected from siltation during the construction phase of the project.

i. Prevent Erosion and Sediment Transport from the Site by Vehicles: Whenever construction vehicle access routes intersect or cross over the site, the transport of sediment onto the paved road shall be minimized. If sediment is transported onto a paved road surface, the roads shall be cleaned thoroughly at the end of each day. Sediment shall be removed from paved roads by shoveling or sweeping and shall be transported to a controlled sediment disposal area. If sediment is tracked off site, roads shall be cleaned thoroughly at the end of each day, or at least twice daily during wet weather. Street washing is allowed only after sediment is removed, and street washwater shall be prevented from entering the drainage system and receiving waters.

j. Stabilize Soils: Prevent on-site erosion by stabilizing all exposed and unworked soils, including stock piles and earthen structures such as dikes, dikes, and diversions. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed.

k. Downstream Protection: Downstream of the project site, protect properties and receiving waters downstream from the development sites from erosion due to increases in the volume, velocity, and peak flow rate of drainage water from the project site. If it is necessary to construct flow control facilities to meet this requirement, these facilities shall be functioning prior to implementation of other land disturbing activity, including but not limited to the use of silt fencing along all site boundaries. If permanent infiltration facilities are used to control flows during construction, these facilities shall be protected from siltation during the construction phase of the project.

l. Prevent Erosion and Sediment Transport from the Site by Vehicles: Whenever construction vehicle access routes intersect or cross over the site, the transport of sediment onto the paved road shall be minimized. If sediment is transported onto a paved road surface, the roads shall be cleaned thoroughly at the end of each day. Sediment shall be removed from paved roads by shoveling or sweeping and shall be transported to a controlled sediment disposal area. If sediment is tracked off site, roads shall be cleaned thoroughly at the end of each day, or at least twice daily during wet weather. Street washing is allowed only after sediment is removed, and street washwater shall be prevented from entering the drainage system and receiving waters.

m. Stabilize Soils: Prevent on-site erosion by stabilizing all exposed and unworked soils, including stock piles and earthen structures such as dikes, dikes, and diversions. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed.

n. Downstream Protection: Downstream of the project site, protect properties and receiving waters downstream from the development sites from erosion due to increases in the volume, velocity, and peak flow rate of drainage water from the project site. If it is necessary to construct flow control facilities to meet this requirement, these facilities shall be functioning prior to implementation of other land disturbing activity, including but not limited to the use of silt fencing along all site boundaries. If permanent infiltration facilities are used to control flows during construction, these facilities shall be protected from siltation during the construction phase of the project.

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q. Downstream Protection: Downstream of the project site, protect properties and receiving waters downstream from the development sites from erosion due to increases in the volume, velocity, and peak flow rate of drainage water from the project site. If it is necessary to construct flow control facilities to meet this requirement, these facilities shall be functioning prior to implementation of other land disturbing activity, including but not limited to the use of silt fencing along all site boundaries. If permanent infiltration facilities are used to control flows during construction, these facilities shall be protected from siltation during the construction phase of the project.

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s. Stabilize Soils: Prevent on-site erosion by stabilizing all exposed and unworked soils, including stock piles and earthen structures such as dikes, dikes, and diversions. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed.

t. Downstream Protection: Downstream of the project site, protect properties and receiving waters downstream from the development sites from erosion due to increases in the volume, velocity, and peak flow rate of drainage water from the project site. If it is necessary to construct flow control facilities to meet this requirement, these facilities shall be functioning prior to implementation of other land disturbing activity, including but not limited to the use of silt fencing along all site boundaries. If permanent infiltration facilities are used to control flows during construction, these facilities shall be protected from siltation during the construction phase of the project.

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v. Stabilize Soils: Prevent on-site erosion by stabilizing all exposed and unworked soils, including stock piles and earthen structures such as dikes, dikes, and diversions. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed.

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y. Stabilize Soils: Prevent on-site erosion by stabilizing all exposed and unworked soils, including stock piles and earthen structures such as dikes, dikes, and diversions. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed.

z. Downstream Protection

A. Applications. Concrete waste management requirements shall apply to all construction sites, phases, subdivisions, or developments with concrete work. This includes the use of concrete delivered by truck or other concrete coated equipment, mortar-mixing stations, or where concrete dust, debris, or slurry is created by either construction or demolition. Concrete waste management practices shall also apply to any operator of a vehicle used to deliver or apply concrete products.

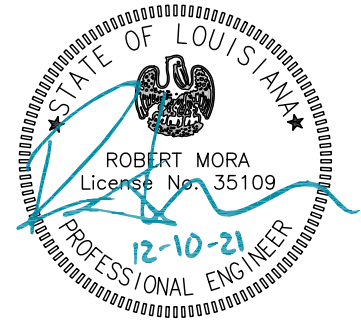
1. All concrete sites shall provide and identify a reasonable concrete washout facility for the use of those providing concrete, or concrete related services on that site or make arrangements for the removal of concrete waste.
2. In some cases, particularly in the case of an owner-builder construction or renovation of a single structure, the concrete provider is expected to dispose of or washout any excess concrete or debris in a manner consistent with this section even if the site does not lend itself to a separate washout facility.
3. Design concrete washout facilities to provide a six cubic yard of containment volume for every ten cubic yards of concrete to be poured. There must be a minimum freeboard of six inches for those facilities built above the ground or a minimum of 12 inches for those built below grade. Prefabricated washout facilities are allowed so long as they meet the criteria of temporary facilities in terms of capacity, protection from runoff and clean out requirements. All washout areas must:
 1. Be located as far away from storm drains, ditches, or other bodies of water as is practical.
 2. Provide all-weather access with sufficient controls to keep mud or debris from the streets surrounding the facility.
 3. Physically restrict all runoff from the area by construction of temporary pit or bermed area of sufficient size. Artificial berms may be created from straw bales or sand bags so long as the same is staked and is double or triple-lined with polyethylene sheeting of sufficient thickness and without holes or tears.
 4. Be clearly marked by signage.
 5. Be lined with polyethylene sheeting of sufficient thickness and which is free from holes, tears, or defects that compromise the impermeability of the material.
4. Maintenance requirements. The washout pit shall be cleaned and maintained on a regular basis.
 1. The facility must be removed or cleaned out when the facility is no longer required for work in the area or when the facility is at 75 percent capacity.
 2. To remove or clean the facility, the hardened concrete should be removed and disposed of. Materials used to construct the temporary facility must also be removed and disposed of when they are no longer suitable for use or no longer needed.
 3. Any holes or depressions caused by a temporary washout facility should be backfilled and repaired and the soil shall be stabilized.
 4. Be cleaned up immediately in the event that any liquid or other contaminant is found outside the washout facility.
 5. All concrete waste material must be properly disposed of.

Contractor must comply with procedures outlined by Public Works Standard Section C204.



TENNIS COURT CONVERSION TO BEACH
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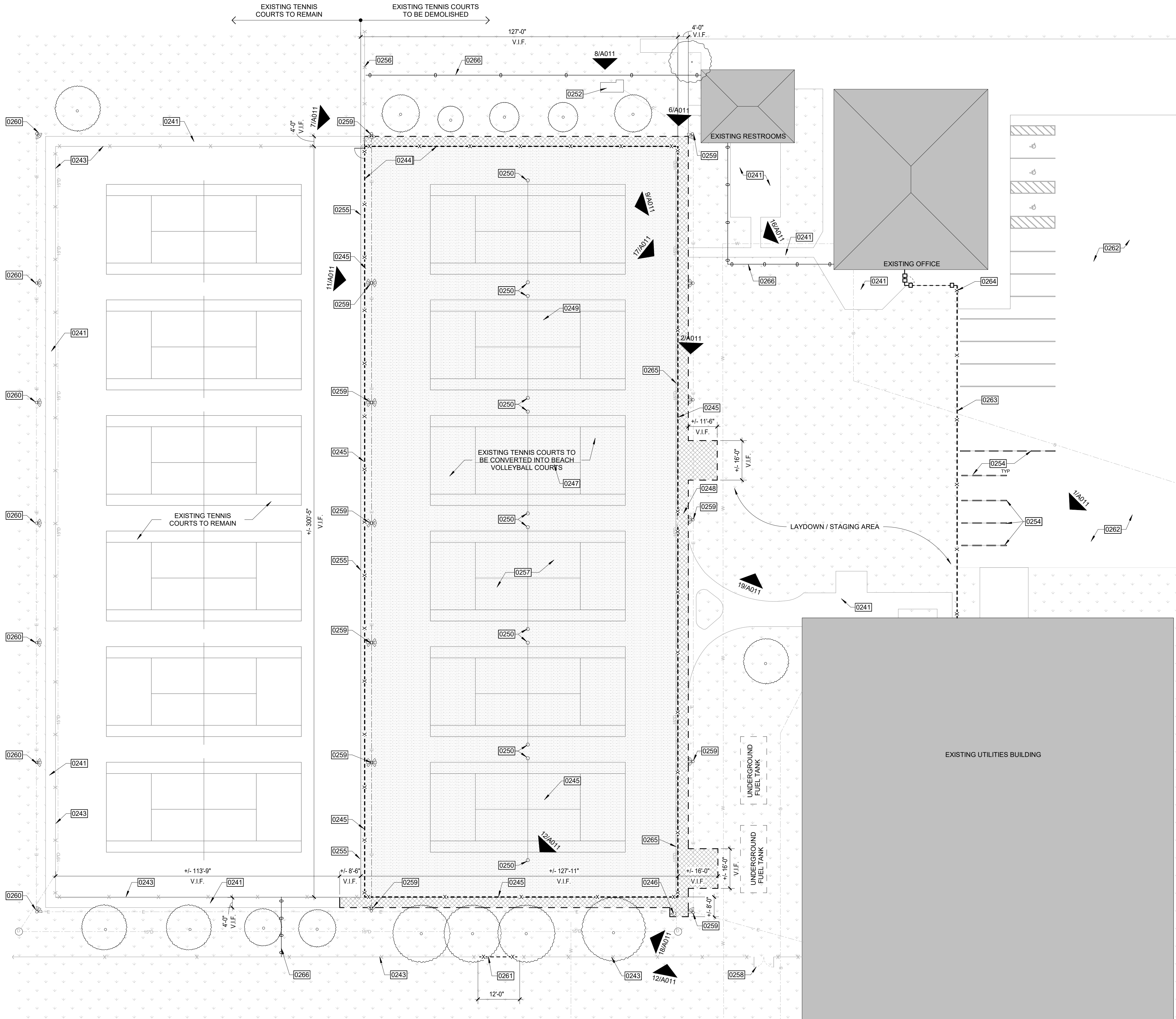
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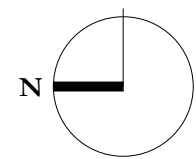
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C109



16 SITE PLAN - DEMOLITION
1" = 20'-0"



KEYNOTE LEGEND

- 0241 EXISTING SIDEWALK TO REMAIN
0243 EXISTING FENCE TO REMAIN
0244 PORTION OF EXISTING FENCE TO BE REMOVED
0245 EXISTING FENCE TO BE REMOVED IN ITS ENTIRETY
0246 REMOVE EXISTING DRINKING FOUNTAIN AND CONCRETE BASE; MAINTAIN LINE FOR NEW SHOWER; SEE PLUMBING
0247 DEMOLISH EXISTING CONCRETE PAD IN ITS ENTIRETY
0248 DEMOLISH EXISTING CONCRETE SIDEWALK
0249 DEMOLISH PORTION OF EXISTING SIDEWALK
0250 DEMOLISH EXISTING NETTING POSTS; TYPICAL
0252 EXISTING ELECTRICAL PANELS TO REMAIN; PROTECT THROUGHOUT DEMOLITION AND CONSTRUCTION
0254 REMOVE PARKING STRIPING
0255 LINE OF SAWCUT; EXTENT OF COURT REMOVAL
0256 EXISTING WOOD FENCE; PROTECT THROUGHOUT DEMOLITION AND CONSTRUCTION
0257 DEMOLISH EXISTING ASPHALT TENNIS COURT AS REQUIRED FOR INSTALLATION OF NEW SAND VOLLEYBALL COURTS. SEE CIVIL FOR ADDITIONAL INFORMATION.
0258 EXISTING GATE TO REMAIN
0259 EXISTING LIGHT POLE TO REMAIN (TYP); PREP LIGHT POLE SURFACE TO BE PAINTED
0260 EXISTING LIGHT POLE TO REMAIN
0261 DEMOLISH SECTION OF EXISTING FENCE; ADD END POST MATCHING EXISTING FENCE FRAMING AND PREP OPENING TO RECEIVE NEW GATE. ALIGN NEW GATE OPENING WITH GATE OPENING PROVIDED AT WEST SIDE OF NEW FENCE. SEE A101
0262 EXISTING ASPHALT PARKING TO REMAIN; PROTECT FROM DAMAGE
0263 EXISTING ALUMINUM / CHAIN LINK FENCING TO BE DEMOLISHED IN ITS ENTIRETY; KEEP FENCING IN PLACE TO SECURE CONSTRUCTION AREA DURING CONSTRUCTION AND THEN DEMOLISH
0264 AFTER REMOVAL OF LINE POSTS; PATCH CONCRETE SIDEWALKS; TYPICAL
0265 EXISTING 15" DRAIN LINE; CONTRACTOR TO LOCATE EXISTING LINE PRIOR TO DEMOLITION / FOUNDATION WORK TO ENSURE THAT THE EXISTING LINE IS NOT DAMAGED DURING CONSTRUCTION
0266 CONSTRUCTION FENCING

GENERAL DEMOLITION NOTES

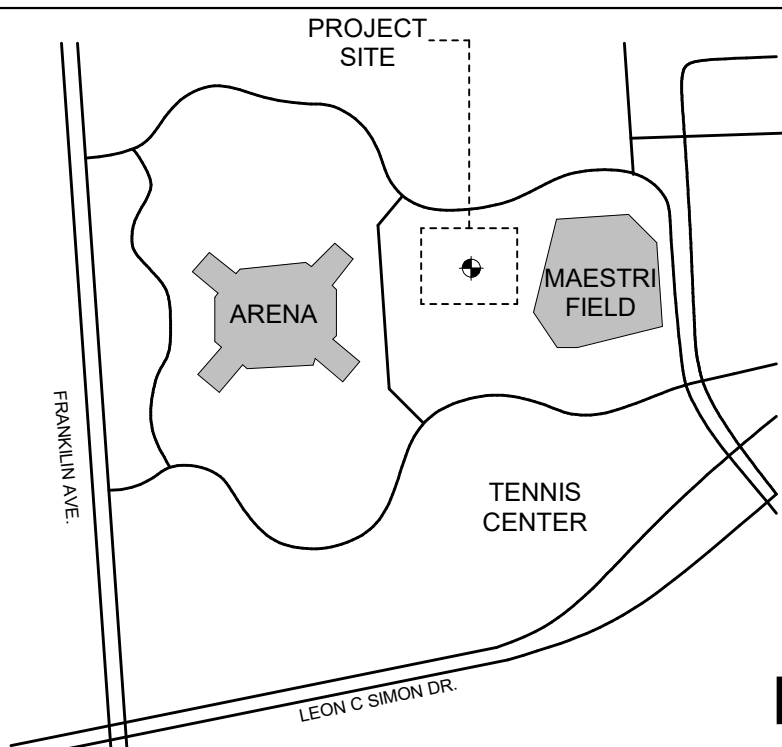
- 1- CONTRACTOR IS TO PROVIDE 6'-0" HIGH CONSTRUCTION FENCING WITH VISUAL BARRIER AROUND THE PERIMETER OF THE SITE WITH MINIMUM (2) 6'-0" GATES AND (2) 12'-0" GATES TO BE LOCATED AT GENERAL CONTRACTOR'S DISCRETION. GENERAL CONTRACTOR SHALL INSTALL CONSTRUCTION FENCING A MINIMUM OF 5'-0" OUTSIDE THE DRIPLINE OF ALL EXISTING TREES INDICATED TO REMAIN THAT HAVE NOT ALREADY BEEN ADDRESSED BY THE OWNER.
- 2- PROTECT EXISTING WORK, WHICH IS TO REMAIN IN PLACE, BE REUSED, OR REMAIN THE PROPERTY OF THE OWNER.
- 3- ALL EXISTING DRAIN INLETS TO REMAIN SHALL BE MAINTAINED, PROTECTED, & KEPT CLEAR OF DIRT & CONSTRUCTION DEBRIS AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO STRUCTURES THAT ARE TO REMAIN.
- 4- ALL TREES, VEGETATION, ETC. ARE APPROXIMATE IN QUANTITY. IT SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT QUANTITY OF VEGETATION TO BE REMOVED.
- 5- REFER TO EARTHWORK SPECIFICATIONS FOR CUTTING AND FILLING REQUIREMENTS.
- 6- UNLESS OTHERWISE NOTED, ALL ITEMS INDICATED AS "TO BE REMOVED" SHALL BE REMOVED AND LEGALLY DISPOSED OF BY THE GENERAL CONTRACTOR AS PART OF THIS CONTRACT.
- 7- WHEN TERM "REMOVAL" IS USED, IT SHALL INCLUDE REMOVAL OF THE ENTIRE IMPROVEMENT INCLUDING SUBSURFACE FOUNDATIONS, UNLESS OTHERWISE NOTED.
- 8- REFER TO CIVIL, MECHANICAL, & ELECTRICAL DEMOLITION PLANS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- 9- REMOVE AND STORE MATERIALS AND EQUIPMENT INDICATED TO BE REUSED OR RELOCATED TO PREVENT DAMAGE, AND REINSTALL AS THE WORK PROGRESSES.

NOTE: THESE GENERAL NOTES APPLY TO SHEET A001 AND ALL OTHER DISCIPLINE SHEETS THAT INCLUDE DEMOLITION AS PART OF THE SCOPE OF WORK

DEMOLITION LEGEND

- EXISTING SIDEWALK TO BE DEMOLISHED IN ITS ENTIRETY
- PORTION OF EXISTING TENNIS COURTS TO BE DEMOLISHED IN ITS ENTIRETY
- EXISTING GRASS; ALL DAMAGE TO EXISTING TURF SHALL BE REPAIRED
- EXISTING TREES TO REMAIN; PROTECT FROM DAMAGE DURING CONSTRUCTION
- EXISTING FENCING TO REMAIN
- EXISTING CHAINLINK FENCE TO BE DEMOLISHED
- EXISTING ALUMINUM FENCE TO BE DEMOLISHED
- 6'-0" HIGH MINIMUM CHAIN LINK CONSTRUCTION FENCE BY GENERAL CONTRACTOR
- ITEMS TO BE REMOVED / DEMOLISHED; SEE KEYNOTE FOR ADDITIONAL INFORMATION

KEY PLAN



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TENNIS COURT CONVERSION TO BEACH
VOLLEYBALL - EAST CAMPUS

6801 Franklin Ave, New Orleans, LA 70122



NO.	DESCRIPTION	DATE
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PROJECT NO.	21048
PHASE	CD
DATE	12.10.21
PROJECT MANAGER	WF
QUALITY CONTROL	RS

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A001

DEMOLITION PLAN

H/S



0243	EXISTING FENCE TO REMAIN
0244	PORTION OF EXISTING FENCE TO BE REMOVED
0245	EXISTING FENCE TO BE REMOVED IN ITS ENTIRETY
0246	REMOVE EXISTING DRINKING FOUNTAIN AND CONCRETE BASE; MAINTAIN LINE FOR NEW SHOWER; SEE PLUMBING
0247	DEMOLISH EXISTING CONCRETE PAD IN ITS ENTIRETY
0248	DEMOLISH EXISTING CONCRETE SIDEWALK
0250	DEMOLISH EXISTING NETTING POSTS; TYPICAL
0251	DEMOLISH EXISTING ELECTRICAL CONDUIT ALONG FENCE; SEE ELECTRICAL
0252	EXISTING ELECTRICAL PANELS TO REMAIN; PROTECT THROUGHOUT DEMOLITION AND CONSTRUCTION
0256	REMOVE PARKING STRIPING
0258	EXISTING WOOD FENCE; PROTECT THROUGHOUT DEMOLITION AND CONSTRUCTION
0259	EXISTING ASPHALT TENNIS COURT AS REQUIRED FOR INSTALLATION OF NEW SAND VOLLEYBALL COURTS; SEE CIVIL FOR ADDITIONAL INFORMATION
0295	EXISTING LIGHT POLE TO REMAIN (TYP); PREP LIGHT POLE SURFACE TO BE PAINTED
0296	EXISTING ALUMINUM / CHAIN LINK FENCING TO BE DEMOLISHED IN ITS ENTIRETY; KEEP FENCING IN PLACE TO SECURE CONSTRUCTION AREA DURING CONSTRUCTION AND THEN DEMOLISH
0297	EXISTING UTILITIES BUILDING TO REMAIN
0361	CONTRACTOR SHALL MATCH TYPE, COLOR, TEXTURE OF NEW BRICK / GROUT WITH EXISTING BASEBALL ENTRY; SUBMIT SAMPLES FOR APPROVAL
2602	EXISTING LIGHT STANDARD TO REMAIN

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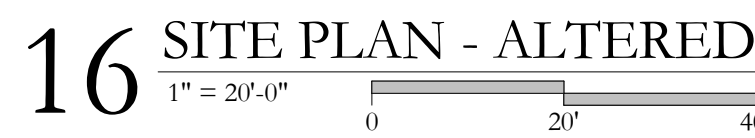
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QUALITY CONTROL	RS

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A011

DEMOLITION PICTURES



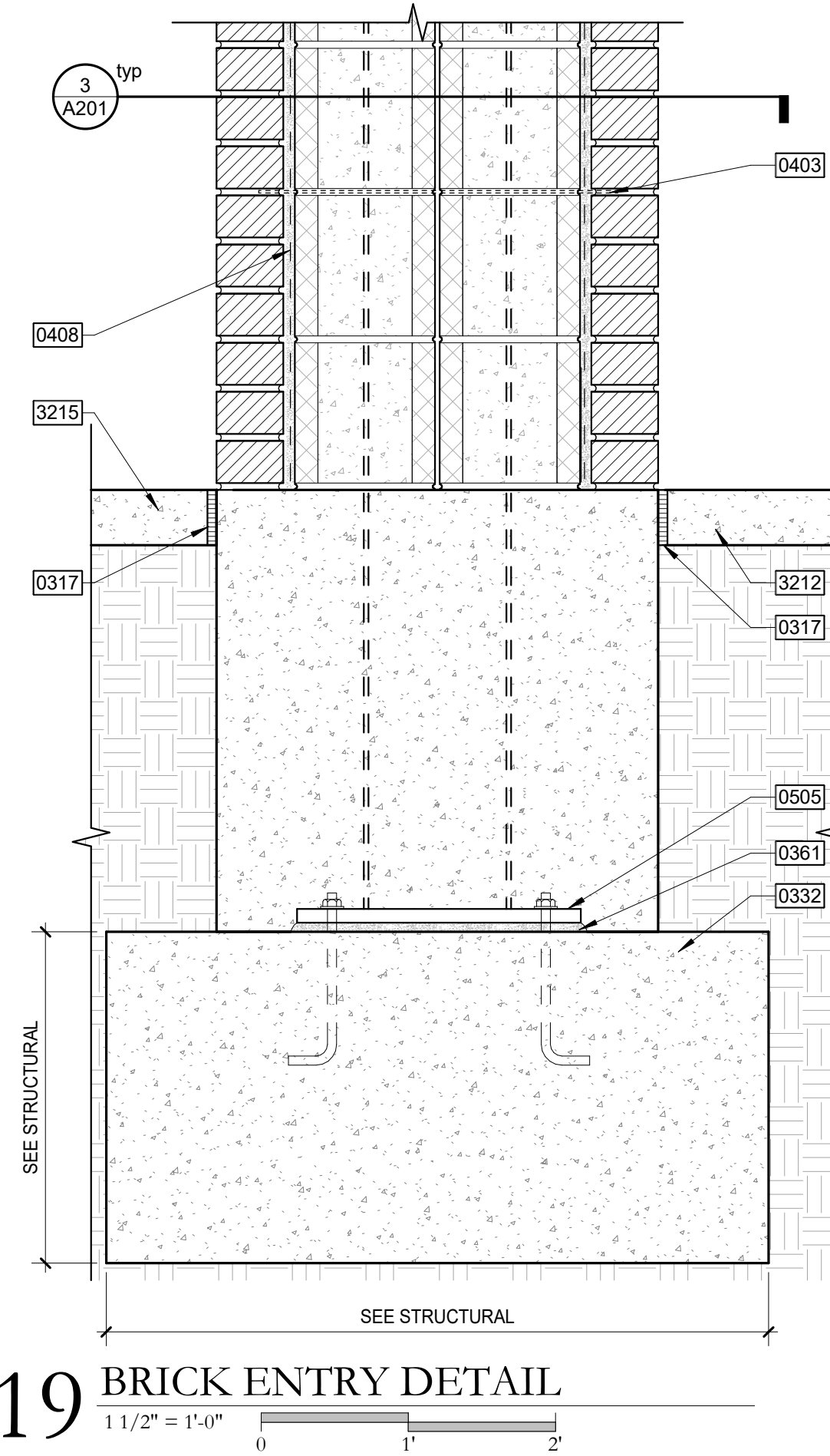
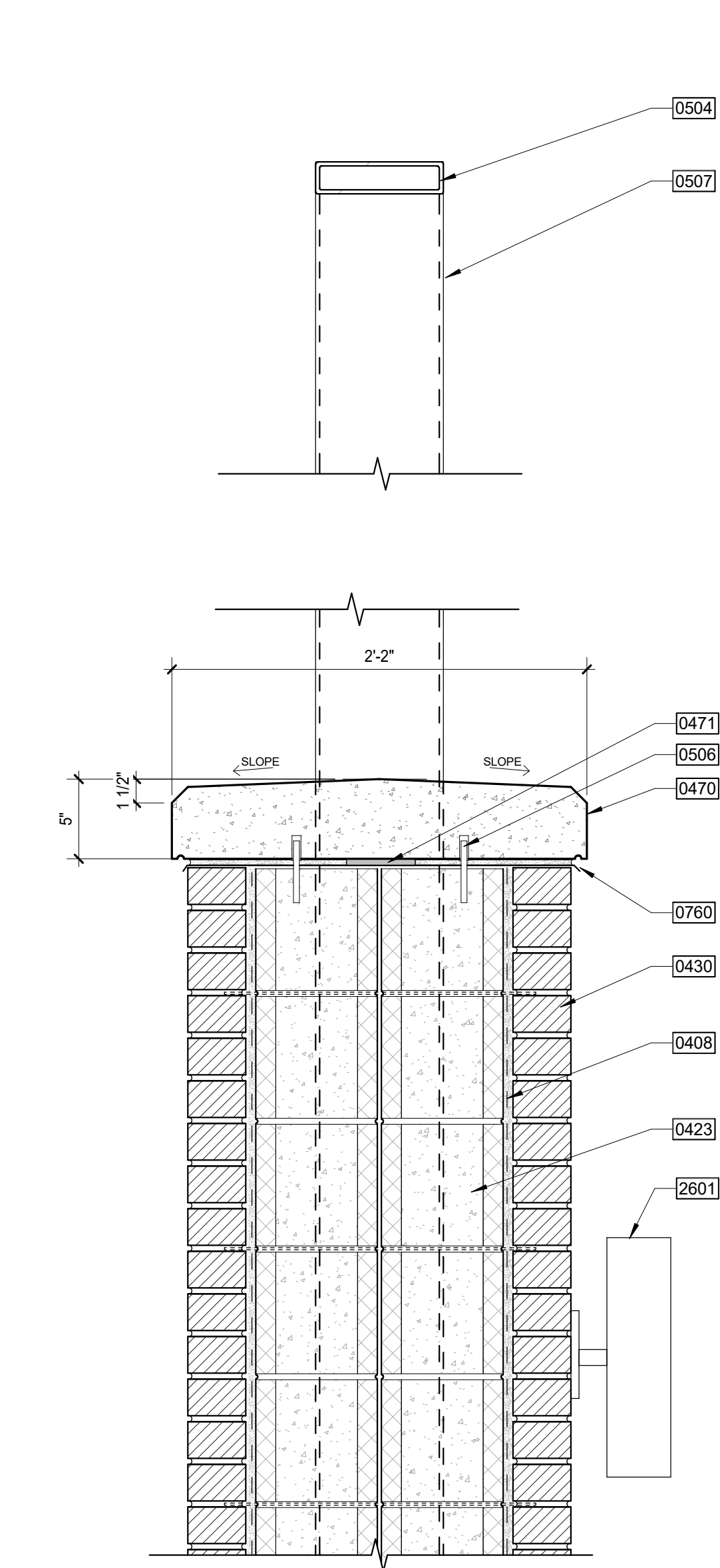
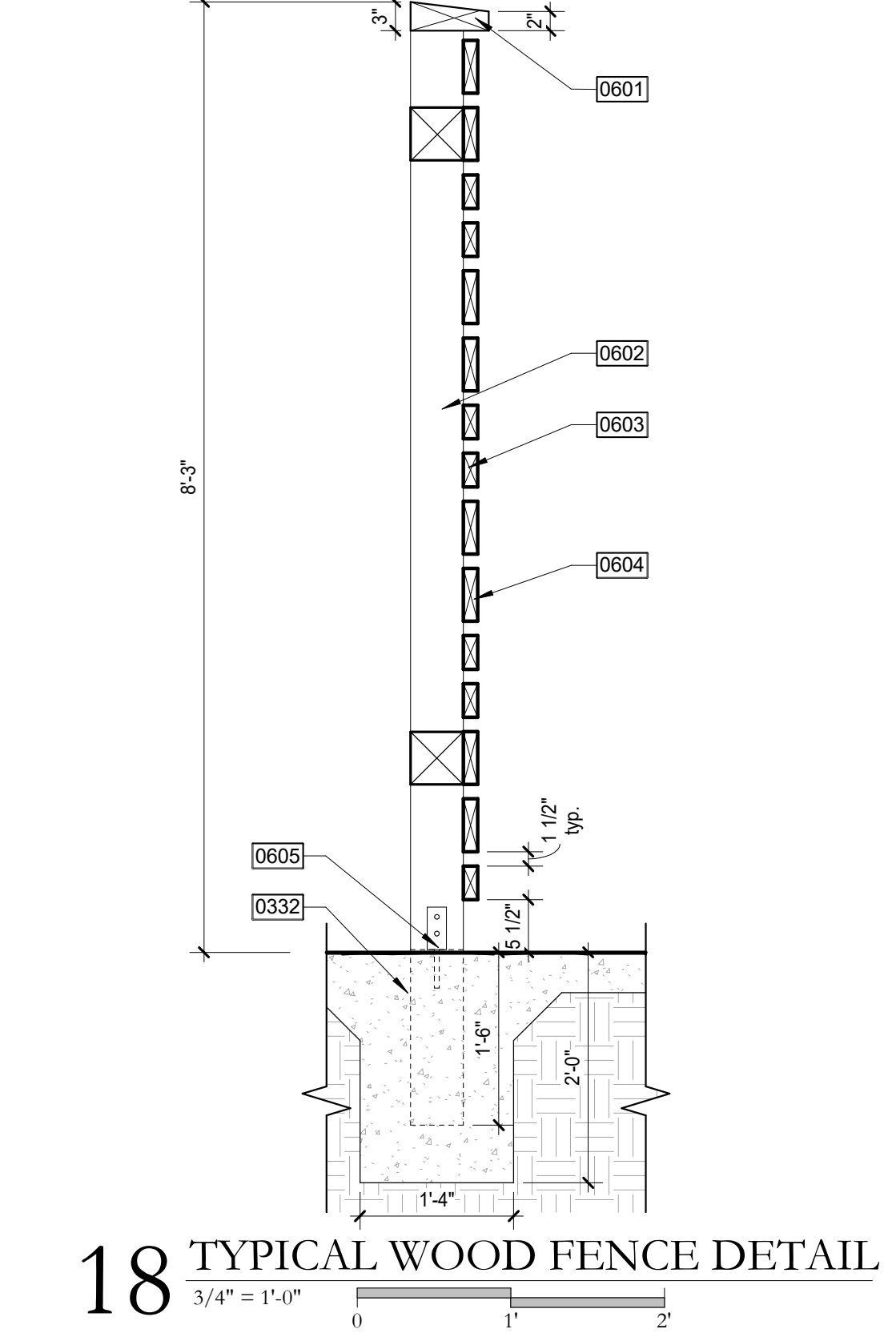
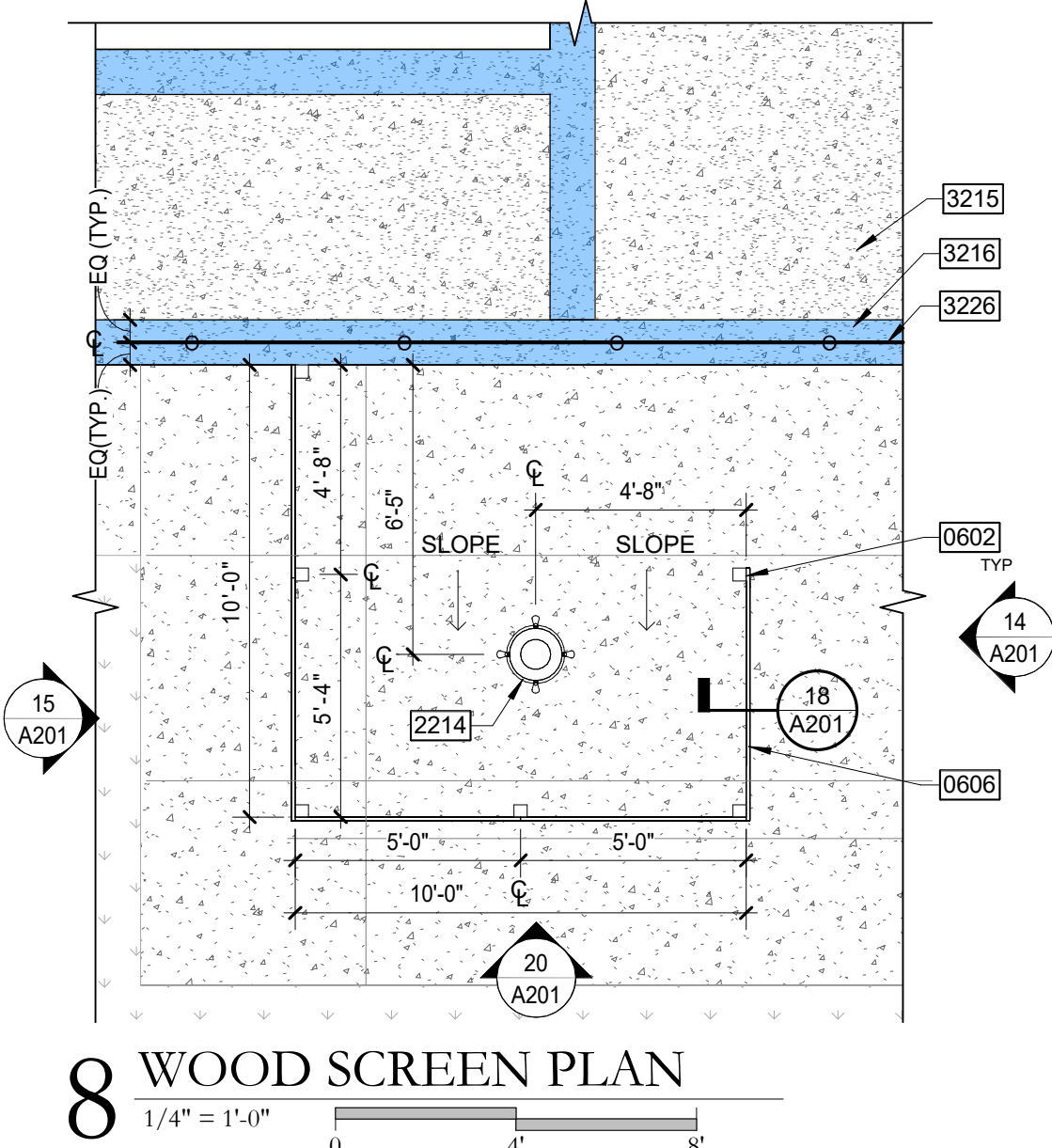
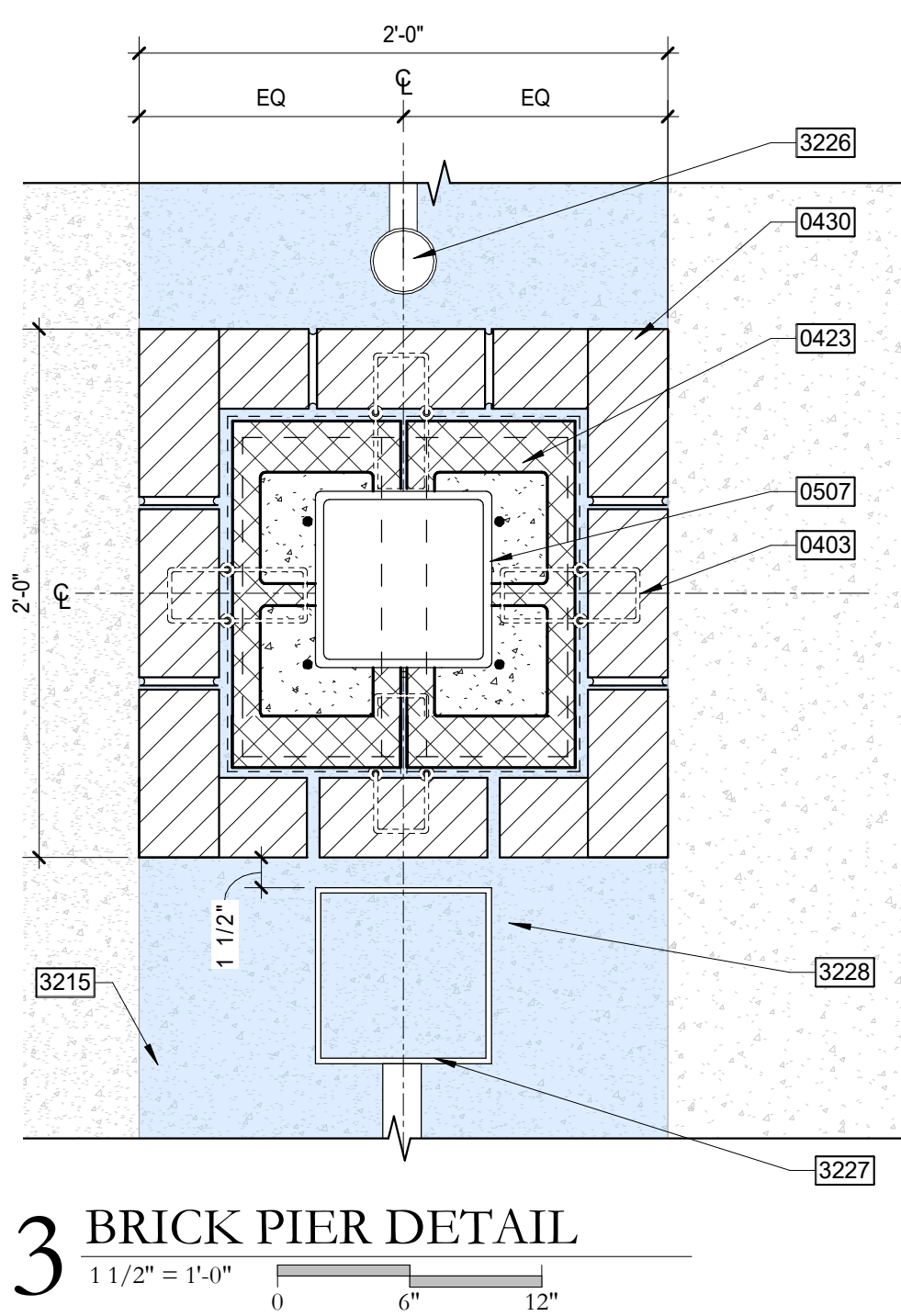
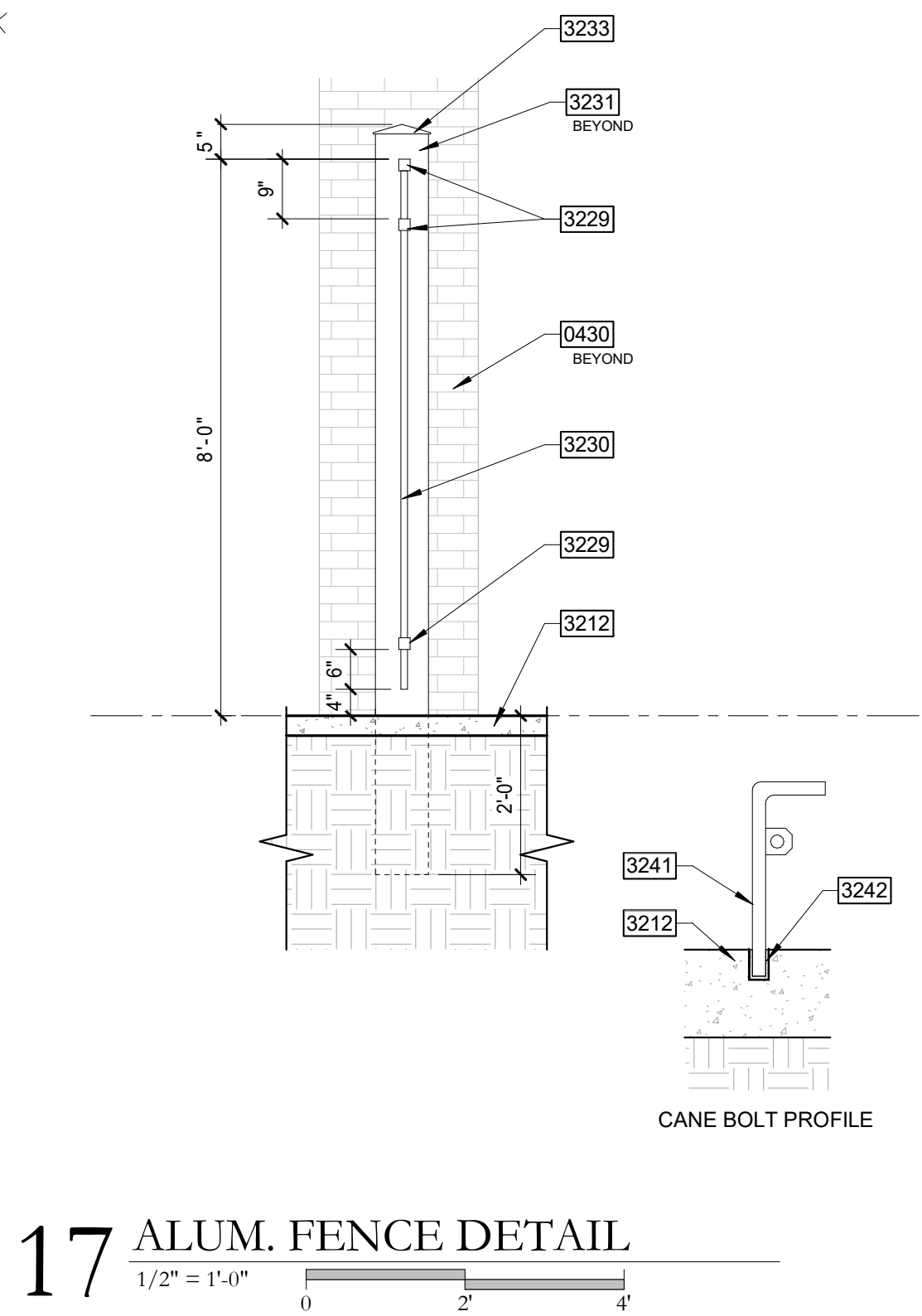
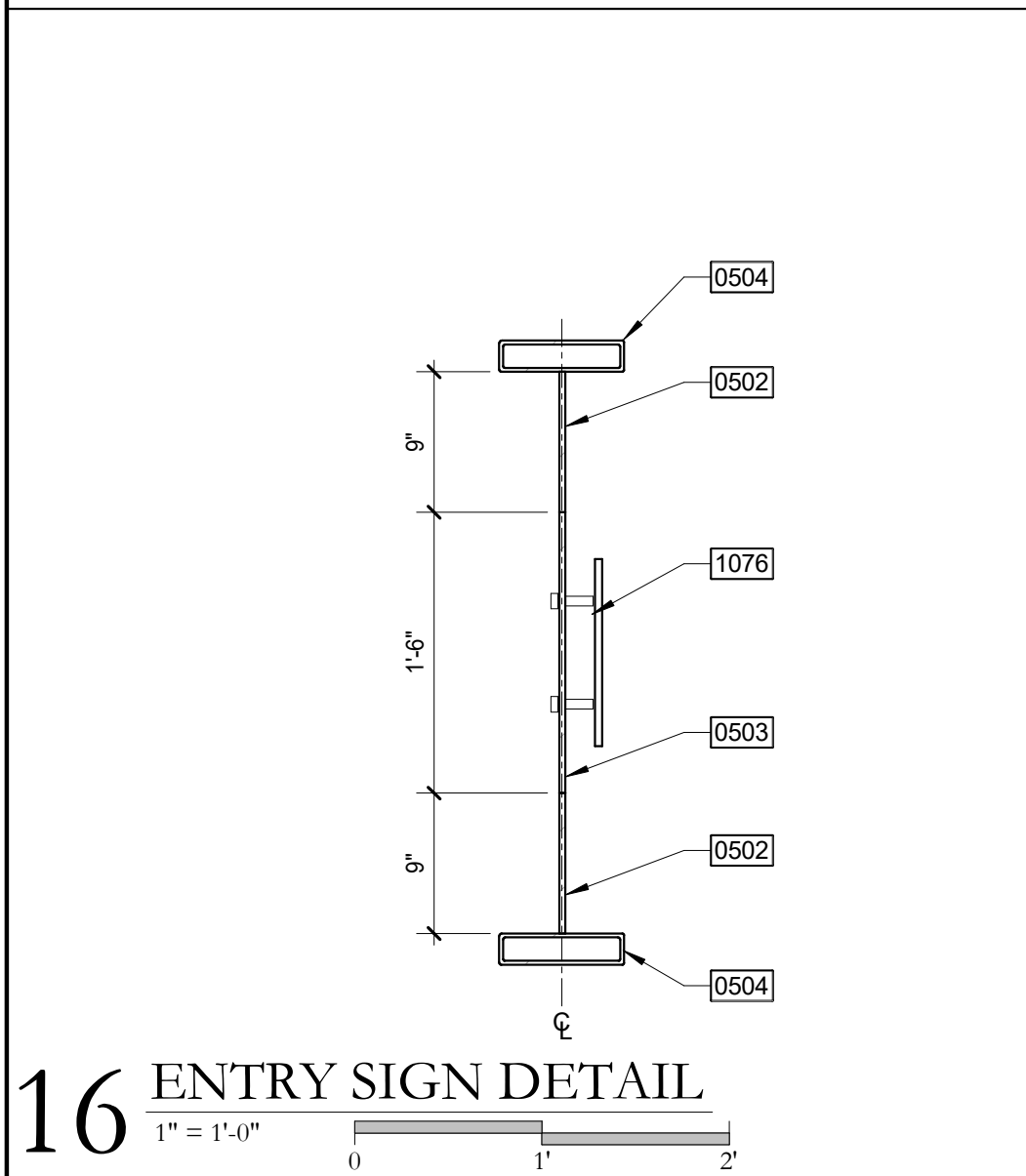
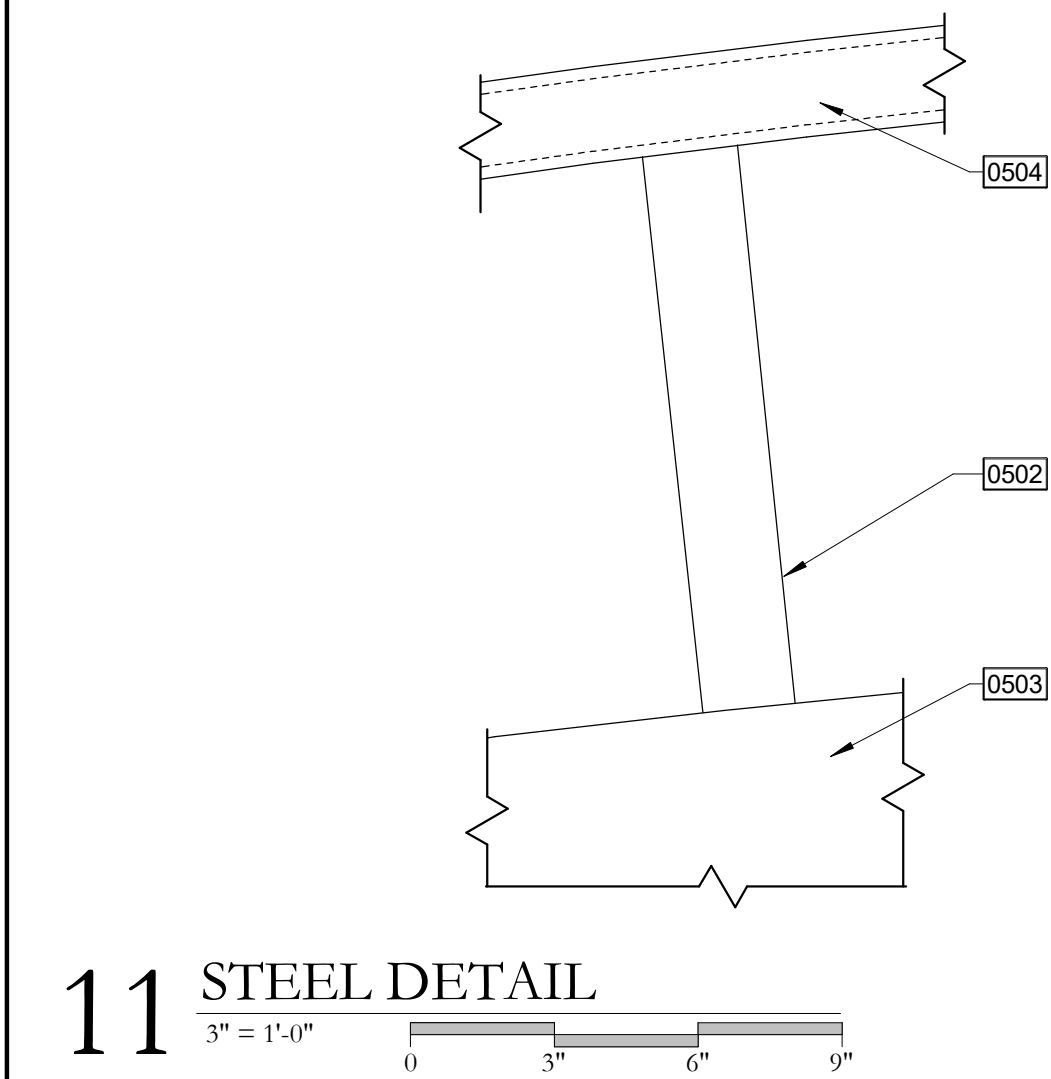
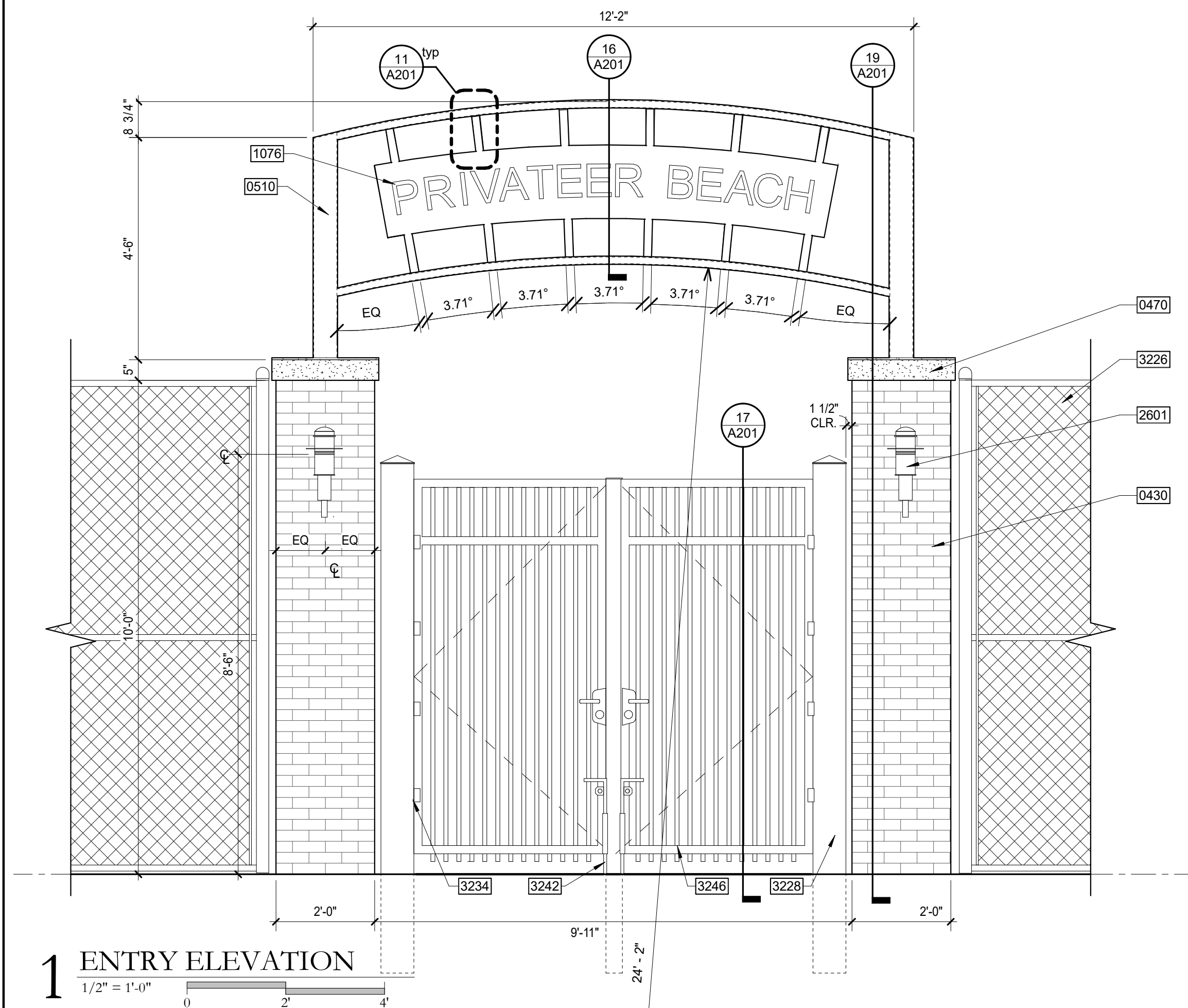
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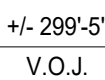
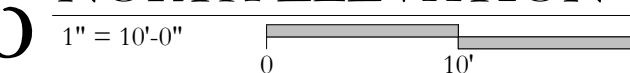
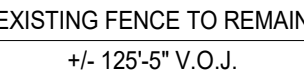
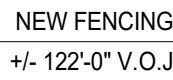
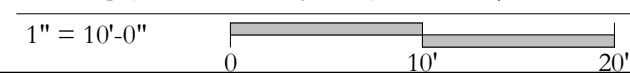
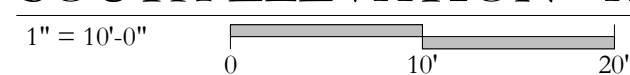
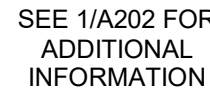
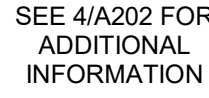
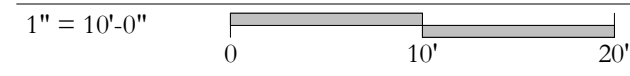
A101

SITE PLAN - ALTERED



KEYNOTE LEGEND

- 0312 1/12" EXPANSION JOINT
- 0332 CONCRETE FOUNDATION & FOOTING: SEE STRUCTURAL
- 0331 LEVELING GROUT: SEE STRUCTURAL
- 0403 HOT DIPPED GALVANIZED BRICK LADDER TIES @ 16" O.C. VERTICAL & HORIZONTAL
- 0408 BITUMINOUS COATING
- 0423 8" X 8" X 16" CMU, INTEGRAL WATER REPELLENT BLOCK & MORTAR, FILL WITH CONCRETE / REINFORCEMENT: SEE STRUCTURAL
- 0430 BRICK VENEER, RUNNING BOND, MATCH TYPE, COLOR, TEXTURE OF BRICK ON MAESTRI FIELD, SEE 14A1011 FOR REFERENCE
- 0470 CAST STONE COPING SYSTEM W/ DRIP EDGE, EXTEND 1" PAST BRICK FACE; SEAL CONJUNCTION PENETRATION JOINT WITH ELASTOMERIC SEALANT
- 0471 HIGH IMPACT PLASTIC SETTING SHIMS
- 0502 2" X 3/8" FLAT BAR; H.D. GALV.; PAINTED WITH HIGH PERFORMANCE COATING
- 0505 PLATE 24" X 3/8" (CURVED) H.D. GALV.; PAINTED WITH HIGH PERFORMANCE COATING
- 0504 TS 8" X 2" X 1/4" (CURVED); SEE 1A201 FOR RADIUS ;H.D. GALV.; PAINTED WITH HIGH PERFORMANCE COATING
- 0505 BASE PLATE; SEE STRUCTURAL
- 0506 SS SECURING PIN EMBEDDED IN CMU; SEAL AT FLASHING PENETRATION
- 0507 TS 8" X 8" 3/16"; H.D. GALV.; PAINTED WITH HIGH PERFORMANCE COATING
- 0510 STEEL ARCH; HOT DIPPED GALV.; PAINTED WITH A HIGH PERFORMANCE COATING
- 0601 CEDAR CAP; FINISHED WITH A SOLID HIDE STAIN; SEE 18A201
- 0602 6X6 CEDAR POST, FINISHED WITH A SOLID HIDE STAIN
- 0603 2X4 CEDAR SLAT MEMBER, FINISHED WITH A SOLID HIDE STAIN
- 0604 2X6 CEDAR SLAT MEMBER, FINISHED WITH SOLID STAIN HIDE
- 0605 GALV. STEEL POST ANCHOR
- 0606 CEDAR SLAT MEMBER; FINISHED WITH SOLID STAIN HIDE
- 0760 SS FLASHING W/ CONT. SEALANT JOINT AT BRICK FACE; SET IN FULL BED OF SEALANT
- 1076 CUT OUT ALUMINUM PAINTED DIMENSIONAL LETTERING ON STAND OFS; LETTERS TO CENTERED ON SIGN; MATCH ARCH RADIUS. 8" TALL. 3/8" THICK LETTERS.
- 2214 OUTDOOR SHOWER WITH HOSE BIB, SEE PLUMBING
- 2601 LIGHT FIXTURE; RE: ELECTRICAL
- 3212 CAST-IN-PLACE CONCRETE SIDEWALK; SEE CIVIL FOR CONCRETE THICKNESS, JOINTS, CURBS OPEN; COORDINATE LOCATION IN FIELD
- 3215 CAST-IN-PLACE CONCRETE SIDEWALK WITH COOL DECK COATING; SEE CIVIL
- 3216 1'-0" WIDE CAST-IN-PLACE CONCRETE SIDEWALK BAND ACCENT COLOR; SEE CIVIL
- 3228 10" TALL VINYL COATED CHAIN LINK FENCE; CENTER ON COLORED CONCRETE BAND BELOW TYPICAL; 3" DIAMETER VERTICAL POSTS MIN.
- 3227 DOUBLE 4" ALUM. GATE & HARDWARE
- 3228 8X8" ALUM. POST; MATCH GATE FINISH
- 3229 1 3/4" ALUM. RAIL
- 3230 1" ALUM. PICKETS
- 3231 ALUM. POST
- 3233 ALUM POST CAP
- 3234 HINGE (4) PER GATE
- 3241 3/4" DIAMETER CANEBOUL WITH LOCKING TABS
- 3242 CANEBOUL KEYS RECESSED IN CONCRETE AND EPOXY SET; PROVIDE KEEPER AT 10 DEGREES OPEN; COORDINATE LOCATION IN FIELD
- 3246 ALUMINUM GATE (2) 4'-0" X 8'-0" PANELS AND CENTER POST; PROVIDE GATE CLOSERS AND ADA ACCESSIBLE LEVER LOCKSET; FINISH TO MATCH GATE / FENCE; GATE LOCK TO BE KEYSD WITH OWN'S KEYSING SYSTEM. LCOXIN® X LUKYJ5 SURFACE MOUNTED "US" MORTISE CYLINDER LOCK, BLACK (OR EQUAL) WITH 1/2" X 3/8" X 1 1/2" ALUMINUM GATE STOP AND KEEPER FOR SWING GATE LOCKS (OR EQUAL), WITH LCOXIN® X MAMMOTH 180 SELF CLOSING HINGE SET, BLACK (OR EQUAL)



2243 EXISTING FENCE TO REMAIN

2604 PAINT EXISTING LIGHT POLE WITH A HIGH PERFORMANCE COATING

3224 WOOD FENCE; STAINED CEDAR

3225 VINYL COATED CHAIN LINK FENCE; GATE WITH CLOSER; PROVIDE ADA ACCESSIBLE LEVER LOCKSET; FINISH TO MATCH GATE / FENCE; GATE LOCK TO BE KEED WITH UNO'S KEYING SYSTEM; LCOINOX # LAKQU2-KIT CHAIN LINK FENCE GATE LOCK KIT WITH APPROPRIATE TENSION BANDS, BLACK (OR EQUAL) WITH LCOINOX # SH-LKLF: SECURITY GATE STOP & KEEPER (OR EQUAL)

3226 10' TALL VINYL COATED CHAIN LINK FENCE; CENTER ON COLORED CONCRETE BAND BELOW TYPICAL; 3" DIAMETER VERTICAL POSTS MIN.

3228 8'X8' ALUM. POST; MATCH GATE FINISH

3237 4"X4" ALUM POST

3238 ADDITIONAL NEW FENCE END POST TO TERMINATE EXISTING FENCING.

3240 8' WIDE ROLLING GATE; PROVIDE LATCHING HARDWARE WITH SUPPORT RAILS AS REQUIRED.

3243 ALUMINUM GATE; (2) 4'X 7'-0" PANELS AND CENTER POST; PROVIDE GATE CLOSERS AND ADA ACCESSIBLE LEVER LOCKSET; FINISH TO MATCH GATE / FENCE; GATE LOCK TO BE KEED WITH UNO'S KEYING SYSTEM; LCOINOX # LUKYJ5 SURFACE MOUNTED "US" MORTISE CYLINDER LOCK, BLACK (OR EQUAL) WITH LCOINOX # SF-LKALUMQF: GATE STOP AND KEEPER FOR SWING GATE (OR EQUAL) WITH LCOINOX # MAMMOTH 180 SELF CLOSING HINGE SET, BLACK (OR EQUAL)

3244 12' WIDE ROLLING GATE MANUALLY OPERATED; PROVIDE LATCHING HARDWARE WITH SUPPORT RAILS AND WHEELS AS REQUIRED; CENTER BETWEEN EXISTING TREES; VERIFY LOCATION WITH OWNER

- CONTRACTOR SHALL SUBMIT BRICK AND MORTAR TO ARCHITECT FOR REVIEW PRIOR TO ORDERING MATERIAL.
- ALL EXPOSED STEEL WITH BE PAINTED WITH A HIGH PERFORMANCE COATING CONTRACTOR WILL VERIFY PRIMER IS COMPATIBLE WITH HIGH PERFORMANCE COATING.
- DIMENSIONS ARE MEASURED TO THE CENTER LINE OF FENCE POSTS.
- CHAINLINK FENCE INSTALLED ON THE OUTSIDE OF THE POSTS.

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TENNIS COURT CONVERSION TO BEACH
VOLLEYBALL - EAST CAMPUS
6801 Franklin Ave, New Orleans, LA 70122



PROJECT NO.	21048
PHASE	CD
DATE	12.10.21
PROJECT MANAGER	WF
QUALITY CONTROL	RS

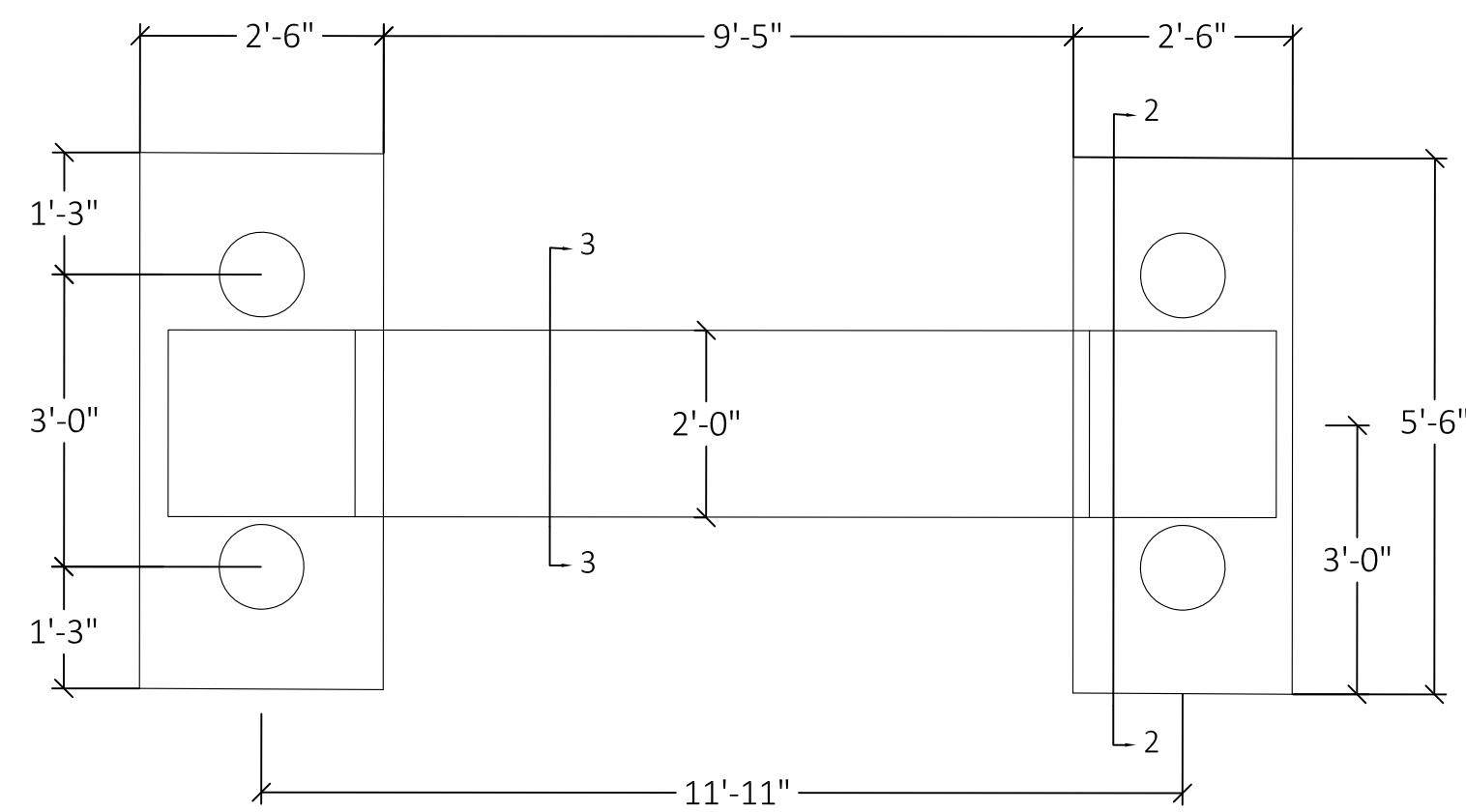
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FENCE ELEVATIONS

TENNIS COURT CONVERSION TO BEACH
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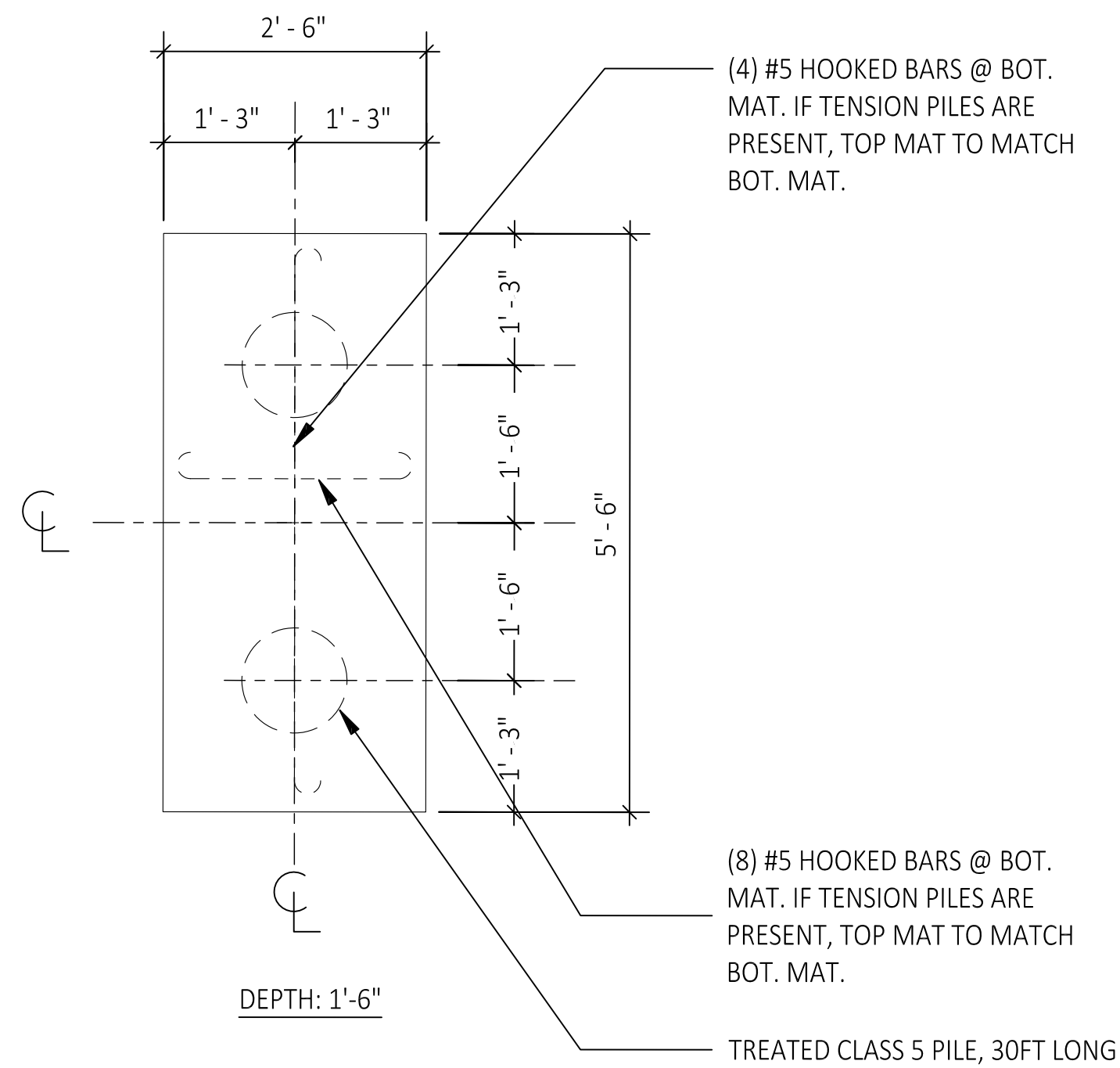
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1 ENTRANCE GATE PLAN VIEW

S102	S102
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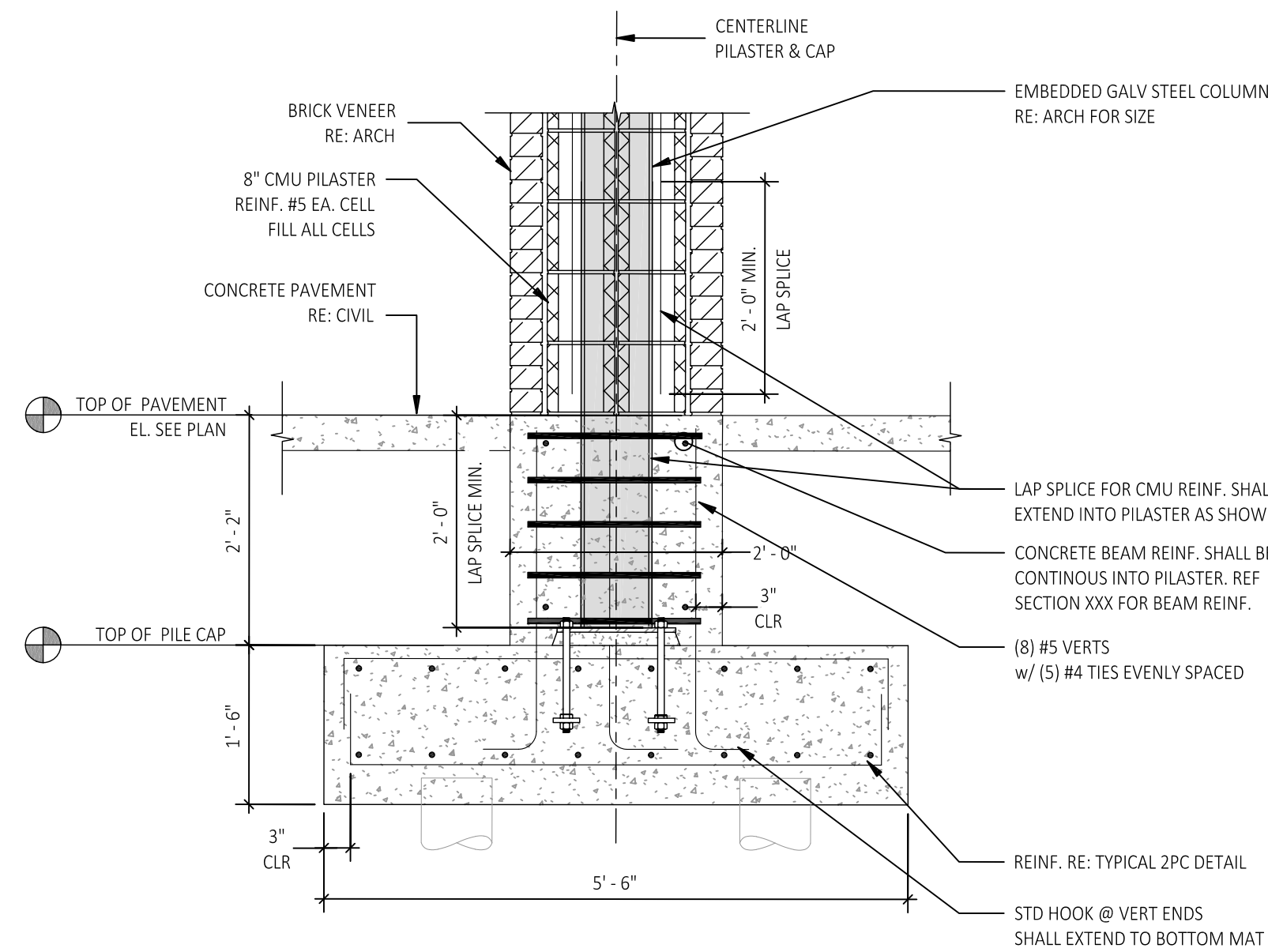
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A PILE CAP (2 PILES)

S102	S102
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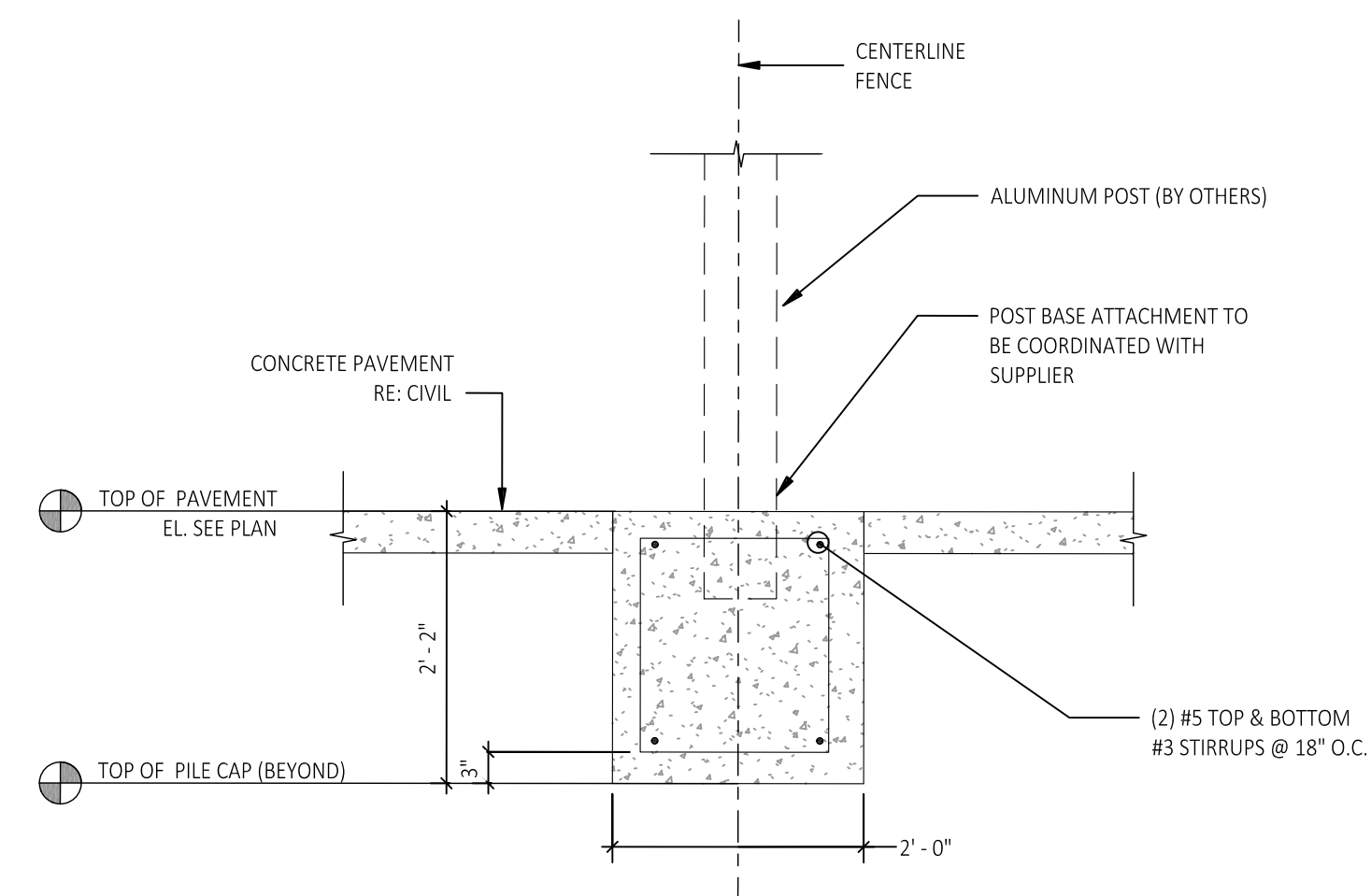
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2 CMU PLASTER @ PILE CAP

S102	S102
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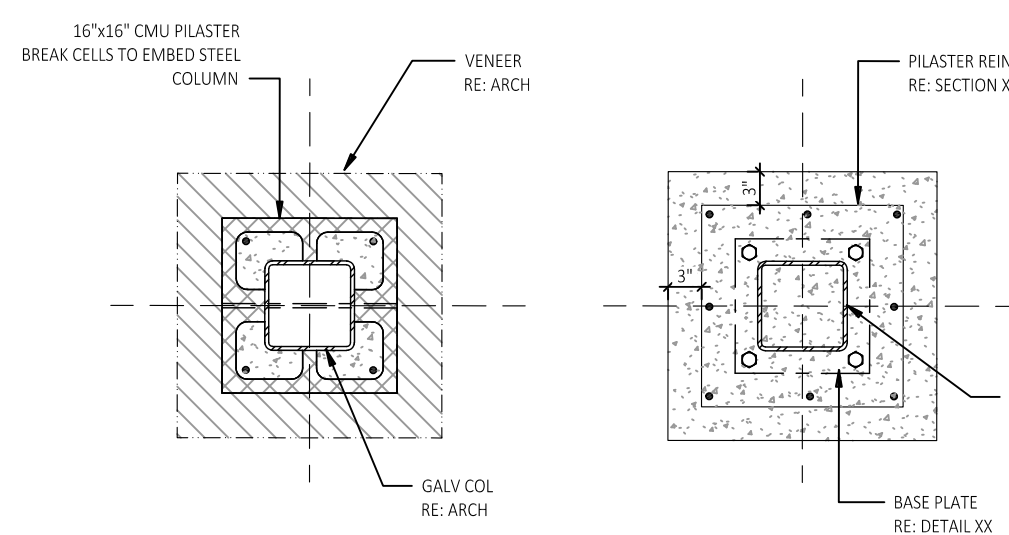
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3 FENCE GRADE BEAM

S102	S102
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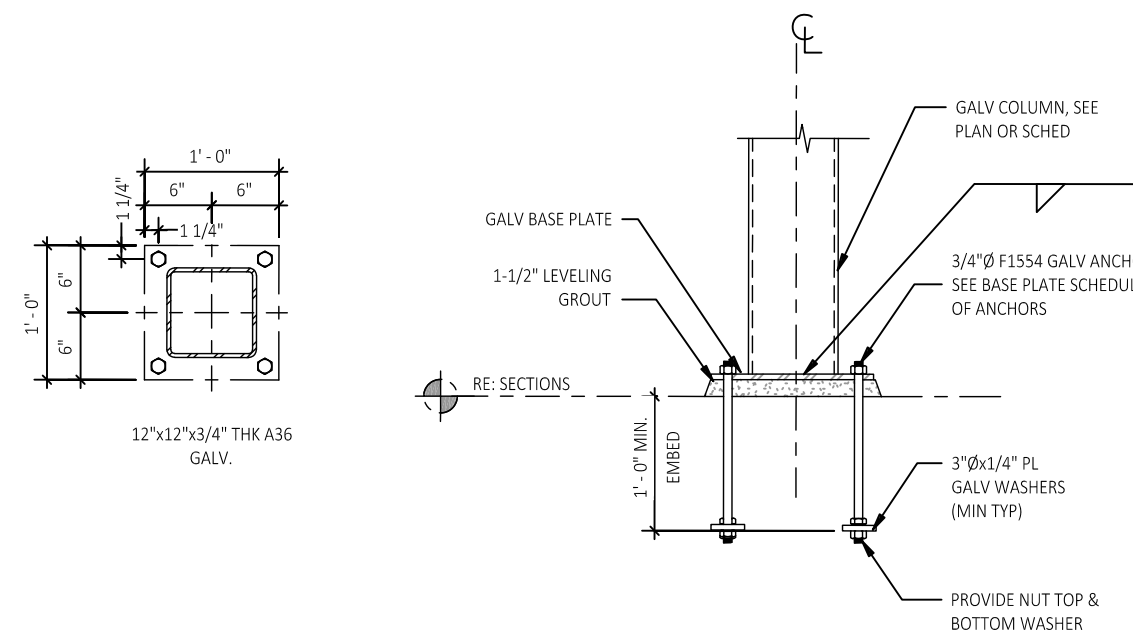
NOT TO SCALE



4 PLAN DETAIL PILASTERS

S102	S102
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NOT TO SCALE



5 COLUMN BASE AND LEVELING PLATE

S102	S102
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NOT TO SCALE



12/14/20

NO.	DESCRIPTION	DATE
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[illegible]

PROJECT NO.	21048
PHASE	CD
DATE	12.10.21
PROJECT MANAGER	BJ
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STRUCTURAL DETAILS

S/H



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NO. DESCRIPTION DATE

PROJECT NO. 21048

PHASE CD

DATE 12.10.21

PROJECT MANAGER JTCJR

QUALITY CONTROL JTC

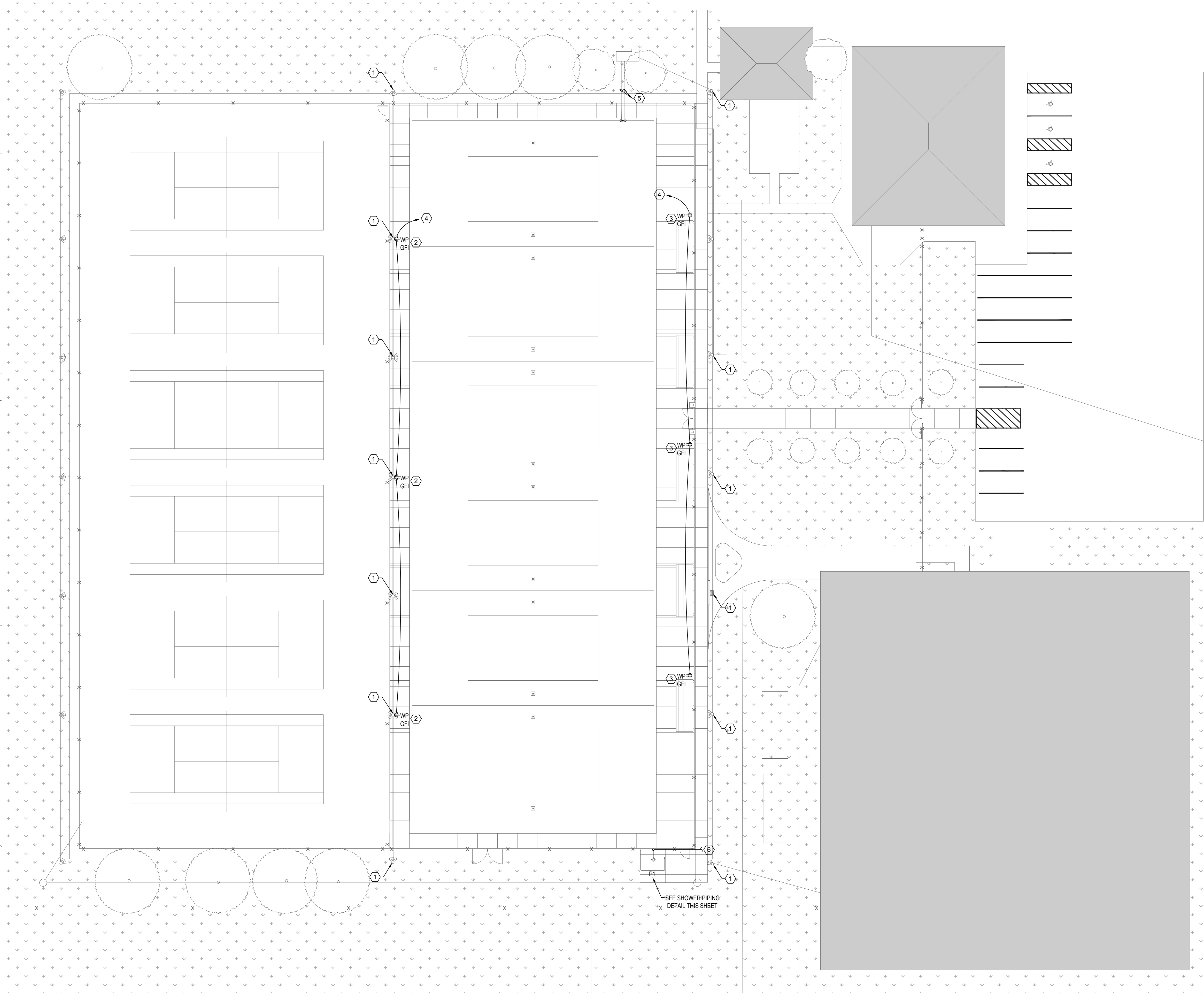
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SITE PLAN - ALTERED

H/S

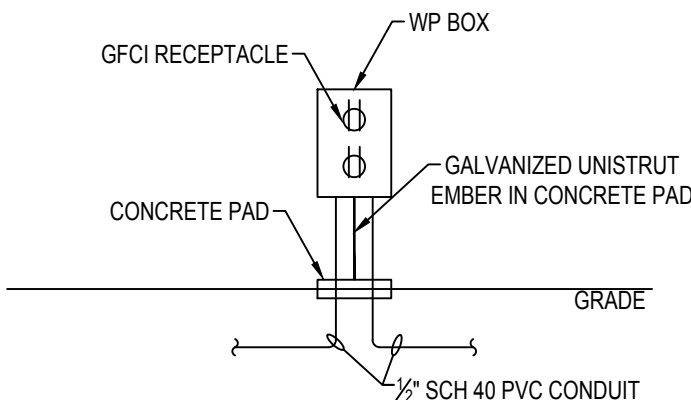


SPECIFIC NOTES THIS SHEET:

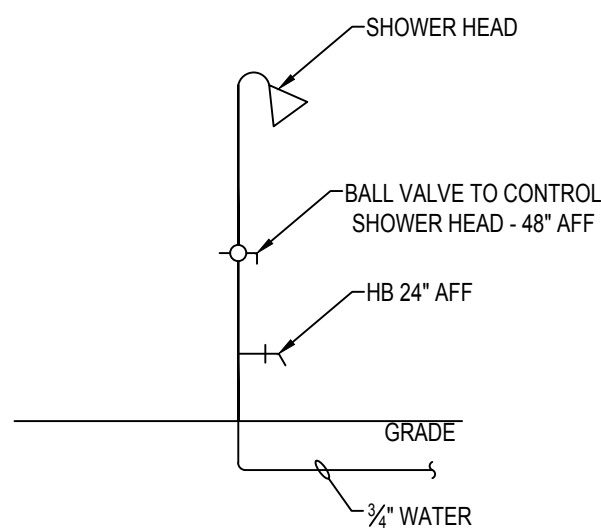
- EXISTING POLE TO REMAIN.
- PROVIDE NEW WP GFCI OUTLET. MOUNT TO LIGHT POLE 48\" AFF.
- PROVIDE NEW WP GFCI OUTLET. MOUNT INSIDE FENCE. SEE SUPPORT DETAIL THIS SHEET.
- HOMERUN TO EXISTING PANEL. PROVIDE 20A, 1P BREAKER.
- PROVIDE (2) 2\" SCH 40 PVC CONDUITS FROM ELECTRICAL PANELS. STUB UP AND CAP AT END OF COURT AS SHOWN. PROVIDE PULLSTRING.
- CONNECT NEW 3/4\" CW TO EXISTING. VERIFY EXACT LOCATION ON SITE.

GENERAL NOTES THIS SHEET:

- REFER TO ARCHITECT'S FLOOR PLANS AND ARCHITECT'S ELEVATIONS FOR RECEPTACLE AND OUTLET LOCATIONS. PROVIDE ADDITIONAL RECEPTACLES AS REQUIRED.
- PROVIDE DEDICATED NEUTRAL FOR EACH CIRCUIT. DO NOT SHARE NEUTRAL CONDUCTORS.
- ALL CONDUIT SHALL BE 1/2\" WITH 2-#12 AWG & 1-#12 GRD UNLESS NOTED OTHERWISE. FOR CONDUIT RUNS LONGER THAN 75', UPSIZE CONDUCTORS TO #10 AWG.
- GROUNDING SHALL BE IN ACCORDANCE WITH NEC ART. 250.
- PROVIDE POWER FOR ALL EQUIPMENT SHOWN ON MECHANICAL AND ARCHITECTURAL FLOOR PLANS. COORDINATE EXACT REQUIREMENTS WITH SUBMITTALS.
- ALL WORK SHALL BE IN ACCORDANCE WITH THE NEC.



NOTE 3 RECEPTACLE MOUNTING DETAIL
NO SCALE



SHOWER PIPING DETAIL
NO SCALE

16 SITE PLAN - 6 COURTS - MECHANICAL

1\" = 20'-0\"

0 20' 40'

